Three Essays on Democracy, Inequality, and Redistribution in Developed Countries

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A thesis submitted for the degree of PhD

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March 2018

Summary

The purpose of this thesis is to lay the empirical foundations for exploring the dynamics of democracy, inequality, and redistribution in advanced countries. The thesis consists of three main essays: The first essay provides a new measure of democracy that captures the dynamics of democracy in developed countries, and the second and third essays focus on the dynamic relation between inequality and redistribution. The first paper shows that developed democracies are not uniformly democratic across different dimensions by constructing the Democratic Performance Index (DPI). The DPI, which has eight distinct dimensions of democratic performance, is the result of a conceptual and empirical critique of the existing measures of democracy under a middle-range conception of democracy. The second and third papers are closely intertwined to address a long-standing puzzle of whether more economic inequality leads to more redistribution. The second paper investigates the relationship between economic inequality and redistribution at the country level. The paper introduces redistributive preferences as an intervening factor in the relationship and presents the Gini coefficient of perceived social position (perceived Gini) as a country-level measure of perceived inequality. The evidence shows that perceived inequality, not actual inequality, is significantly associated with redistributive preferences, while preferences for redistribution do not translate into redistribution. The third paper examines the role of both individuals' objective or subjective social status and their perceptions of inequality in shaping preferences for redistribution. The paper provides new measures of perceived actual inequality, personal norms of inequality, and perceived injustice. The

findings demonstrate that subjective social position has a stronger impact on redistributive preferences than objective social position and that individuals' inequality norms play a more crucial role in preference formation than does their perception of actual inequality. The concluding section summarises and discusses the findings, highlights policy implications, and suggests future areas of inquiry.

Acknowledgements

First and foremost, I would like to express my sincere gratitude to my PhD co-supervisors, Jonathan Slapin and Anna Getmansky, for their constructive advice and encouragement. The completion of my PhD would not have been possible without their great support and guidance. I am also grateful to my former supervisors, Todd Landman and Thomas Scotto, as well as my supervisory board member, Kristian Skrede Gleditsch, for their insightful suggestions and comments on my work. Besides my advisors, my sincere thanks also go to many people in the Department of Government, who supported and helped me go through the PhD period successfully. Particularly, my students who took the *Democracy: Forms and Futures* module gave me a valuable opportunity to learn from them as well as to teach them. My colleagues who studied together in the office 5.013 and the Government & Economics PhD Research Lab allowed me to have animated conversations on many academic as well as personal issues.

I am forever thankful for the undying support and love from my parents, Dongjin Choi and Munyeo Jeong, and my parents-in-law, Yeongcheol Park and Kyungsook Seo. I am also deeply grateful to my partner, Suwon Park, and my children, Hanseul Choi and Hanbi Choi, who stayed and put up with me over the course of my studies in the United Kingdom. Sadly, my father passed away while I was finishing this thesis. I was able to be by his side when he departed this life, but I regret that I could not spend enough time with him on the excuse of doing a PhD abroad. You have always been there for me. I will always there for you.

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INTRODUCTION

Does democracy affect economic inequality, or vice versa? Can democracy be portrayed as serving a Robin Hood function? Does increased inequality lead to more redistribution? These questions still prevail in the field of political economy and have produced a myriad of empirical literature on the relationship between democracy, inequality, and redistribution. However, there have been no clear and consistent findings about the link so far. Even worse is that it is hardly possible to explore the association in developed democracies mainly because most measures of democracy are not sensitive enough to differentiate amongst established democracies. Furthermore, researchers have paid less attention to conceptualising and measuring democracy, which is essential for exploring this relationship, despite many problems embedded in widely used democracy indices (Munck and Verkuilen 2002).[1]

Meanwhile, Meltzer and Richard's (1981) seminal paper, which has generated a large amount of literature on the association between inequality and redistribution that has also provided conflicting findings, highlights that an extension of the franchise increases redistribution by shifting down the position of the decisive voter (i.e., the median voter). This mechanism implies that expanding electoral democracy has an

[1] There is another strand to investigate the linkage using types of democracy, such as social democracy or Christian democracy, rather than indices of democracy (e.g., Bradley et al. 2003; Hewitt 1977). In a similar vein, welfare regime types are also used as a political determinant of inequality and redistribution (e.g., Huber and Stephens 2014). However, in this thesis, this approach is not directly discussed. Instead, it is partly addressed in Chapter 2, as other political determinants, such as government partisanship and electoral institutions, were used as political control variables in the analyses.

impact on redistribution. That is, their argument presupposes that democracy, albeit a minimalist one, also matters in the relationship between inequality and redistribution; however, it has not come into the spotlight in the literature.

Given this, there remain numerous issues that require further exploration on the relationship between democracy, inequality, and redistribution. Amongst these, this thesis addresses two important issues. First, the thesis provides a new measure of democracy that can capture the dynamics of democracy; second, it approaches the dynamics of inequality and redistribution from a new angle that introduces perceived inequality. In doing so, the thesis makes a substantive contribution to the field of political economy from both the theoretical and empirical perspectives. More specifically, this thesis not only presents new empirical measures of democracy and perceived inequality, but it also calls into question the conventional redistribution theory that predicts a positive effect of actual inequality on redistribution as well as its fundamental assumption that objective income position is the most significant determinant of demand for redistribution.

To explore the association between democracy, inequality, and redistribution empirically, each variable should be clearly defined and measured in the first place. In particular, it is more important to conceptualise and measure democracy since it is far less developed in comparison with the conceptualisation and measurement of inequality and redistribution.[2] Moreover, this thesis narrows down the scope of the inquiry to advanced democracies; it is thus critical to construct a valid and reliable measure of democracy.

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[2] Apart from this, the issue of conceptualising and measuring perceived inequality, which the second and third chapters of this thesis address, has recently secured attention in the study of inequality and redistribution.

Measuring democratic performance

There is a lack of consensus on how to define democracy, inequality, and redistribution and to what extent and how they are associated. What is worse, if we are interested in the linkage in existing democracies, it is more challenging to investigate the relation, as existing democracy indices cannot capture clear differences amongst democracies. For instance, according to the Polity scores, which is one of the most widely used measures of democracy, many established democracies have shown no changes in the level of democracy for about a century. With this sort of measure, we cannot identify the dynamic relationships between democracy and other variables.

Most existing indices of democracy are dichotomous measures or ordinal (or graded) ones based on a minimalist conception of democracy; the Freedom House and Polity indices are ordinal, and the democracy measures developed by Doorenspleet (2005) and Acemoglu et al. (2015) are dichotomous, for example. There are numerous previous studies on the association between democracy, inequality, and redistribution using the indices above. Acemoglu et al. (2015), for instance, investigated the effect of democracy on inequality and redistribution with their dichotomous measure of democracy. Their findings indicate that the effect of democracy on tax revenues is significant but that it has no impact on inequality. Timmons (2010) also demonstrated that there is no relationship between democracy and economic inequality by using the Freedom House and Polity indices. In addition, Ansell and Samuels (2014) found that democracy and income inequality have no positive impact on redistribution, using both a dichotomous measure of democracy and the Polity scores.

However, the above findings about the relationship between democracy, inequality,

and redistribution are not applicable to established democracies because the measures of democracy employed in those studies do not differentiate amongst advanced democracies, as previously discussed. Accordingly, if we would like to examine the link in developed democracies, constructing a measure that can distinguish differences amongst democracies should be given top priority. The first essay of the thesis was thus designed to do this job.

The first paper suggests a new measure of democratic performance, which has eight distinct dimensions, by conducting a conceptual and empirical critique of the existing measures of democracy; in this essay, democratic performance is regarded as a synonym of the quality of democracy. However, the paper does not combine the dimensions for a summary measure of democracy, following a strategy that stops forcing distinct dimensions into a unidimensional measure (Bollen and Lennox 1991; Foweraker and Krznaric 2000). This inquiry is interested in what is really going on within a democracy and how dynamic characteristics of a democracy vary across democracies. It is therefore necessary to unfold the concept of democracy and look at separate dimensions, as Gleditsch and Ward (1997, 381) suggested, to preserve information about systematic variations of each dimension. Furthermore, a summary measure of democracy requires a strong theory about how the dimensions of democracy are combined, as Coppedge (2002, 37–8) argued, from which a mathematical formula can be derived. Nonetheless, most previous measures of democracy aggregate their dimensions into a single index without a strong theory; by contrast, this inquiry has reservations about that.

Revisiting the standard model of redistribution

Building on the first essay, avenues for future research may include a study of the relationships between each dimension of democratic performance and structural factors, such as inequality and redistribution. However, it is more urgent to investigate the association between inequality and redistribution than to look directly at the democracy-inequality-redistribution triad. This is because previous research on the link between inequality and redistribution has not provided any consistent and conclusive evidence of the relationship (see Table 1 in Chapter 2 for more details). In fact, it has been a long-standing puzzle whether or not a rise in economic inequality leads to further redistribution since Meltzer and Richard's (1981) influential treatise, which is within the Downsian perspective in the sense that its focus is on the median voter and voter choice (see Downs 1957; Hacker and Pierson 2014). Thus, addressing this puzzle takes precedence over exploring the triad.

In psychology, meanwhile, there have been evident findings: a mismatch between actual reality and its perception and the active role of perceived reality in forming individuals' attitudes or behaviours. These commonly known facts imply that there may be a gap between perceived inequality and actual inequality and that perceived inequality rather than actual inequality may strongly influence preferences for redistribution. Nevertheless, these possibilities have not been sufficiently considered in the previous literature on the dynamics of inequality and redistribution. Therefore, the second and third papers together take notice of the role of perceived inequality in testing the classical redistribution theory, which assumes a close link between actual inequality and redistribution. The two essays are closely linked and complementary in that the former addresses the redistribution theory at the macro level, whereas the latter examines the theory at the micro level.

Most previous studies on the relationship between inequality and redistribution,

however, have not considered preferences for redistribution in their analyses, although the redistribution hypothesis that originated from the Meltzer-Richard (1981) model regards demand for redistribution as an intervening factor between inequality and redistribution. Preferences are basically formed at the individual level, and then they can be aggregated at the society level. Thus, on condition that individual preferences are considered, micro-analysis should and can be conducted. In addition, the micro-analysis of the third paper does not ignore macro-level structural factors that may affect individuals' behaviour.

On the other hand, there are several papers exploring what shapes individual preferences for redistribution, but they do not include investigations of the impact of inequality perceptions on redistributive preferences (e.g., Alesina and Giuliano 2011; Alesina and La Ferrara 2005; Guillaud 2013). Some models of redistributive politics have examined the role of perceptions of social mobility as a determinant of redistributive preferences (Benabou and Ok 2001; Piketty 1995). In a broad sense, perceptions of mobility might be a sort of perceptions relating to inequality of opportunity. However, it is clearly distinguishable from perceptions of inequality in the present inquiry because these perceptions are related to inequality of outcome, such as income or social position. In this regard, the third essay fills the gap in the literature by focussing on perceptions of wage inequality and providing the new measures of the perceptions at the individual level.

Outline of the chapters

This thesis is organised as follows. The first chapter addresses the issues of conceptualising and measuring democratic performance and suggests a middle-range

conception of democracy that excludes both the minimalist and maximalist conceptions of democracy. As a result, this chapter provides the Democratic Performance Index (DPI) as a new measure of democratic quality, covering 30 core democracies and 39 non-core democracies over the period from 1990 to 2012 (see Appendix 1 in Chapter 1 for a list of the countries). This index is comprised of eight core dimensions of democracy: individual liberties, rule of law, public sphere, transparency, participation, representation, competition, and mutual constraints. These dimensions have been distilled from the literature on democracy. The DPI can capture subtle differences amongst democracies across the dimensions, offering opportunities not only for exploring multifaceted characteristics of a democracy but also for investigating the dynamic relation between the quality of democracy and socioeconomic structural factors. This chapter thus makes an important contribution to the field of democracy and comparative political economy by constructing a new measure to gauge the multidimensional variations of democracy in developed countries.

The second chapter revisits the classical redistribution hypothesis by introducing a measure of perceived inequality at the country level. This chapter pays attention to the role of perceived inequality, which deviates from actual inequality in forming redistributive preferences. The inquiry demonstrates that there is a close relationship between perceived inequality, rather than actual inequality, and preferences for redistribution, whereas preferences for redistribution do not translate into redistribution. Redistributive preferences as a mediating factor between inequality and redistribution have been largely overlooked in the previous empirical analyses, although demand for redistribution are taken for granted implicitly or explicitly in the conventional redistributive models. The essay presents a country-level measure of perceived inequality, the Gini coefficient of perceived social position (perceived Gini), which was

built using data from 16 rounds of the International Social Survey Programme (ISSP 1987 to 2014), covering 33 OECD countries. This section contributes to a wider discussion in the study of redistributive politics by showing the significant role of perceived inequality in preference formation and the lack of a significant link between policy preferences and policy outcomes.

The third chapter explores the theory of redistribution at the individual level and presents new measures of inequality perceptions, revealing the importance of subjective social position and personal norms of inequality. From a social-psychological perspective, subjective social status, apart from objective social position, is closely associated with policy preferences. This chapter not only ascertains whether or not the effect of perceived social position on redistributive preferences is stronger than that of actual social position, but it also examines the role of individuals' inequality perceptions, including individuals' inequality norms to which the previous literature has paid little attention, in determining individual preferences for redistribution. This chapter provides the empirical measures of perceived actual inequality, personal norms of inequality, and perceived injustice. To create these measures, the ISSP micro-data were used, and they cover 31 OECD countries over the four waves: 1987, 1992, 1999, and 2009. This chapter makes a considerable contribution to the field of micro-comparative research on redistributive preferences not only by providing evidence that contradicts the essential assumption of the standard redistribution theory, which contends that objective social position plays a decisive role in shaping support for redistribution, but also by highlighting the important role of individuals' inequality norms in preference formation for redistribution.

To sum up, this thesis contributes to a wider discussion in the field of political economy not only by suggesting a measure of democratic performance that can capture

the dynamics of democracy in advanced countries. It also introduces the dimension of perceived inequality at both the macro and micro levels in testing the dynamic relationship between inequality and redistribution; in this respect, the inquiry unites political economy and social psychology. Therefore, the current research lays the foundations of empirical research on the dynamic link between democracy, actual or perceived inequality, and redistribution in developed countries.

CHAPTER 1
Measuring Democratic Performance: A Multidimensional Approach

Abstract

This article constructs the Democratic Performance Index (DPI) as a new measure of democratic quality, covering 69 existing democracies over the period from 1990 to 2012. This index contains eight core dimensions of democracy: individual liberties, rule of law, public sphere, transparency, participation, representation, competition, and mutual constraints, which have been extracted from the democracy literature. To this end, first, this paper reviews previous attempts to conceptualise and measure the quality of democracy; second, democratic performance is defined under a middle-range conception of democracy that avoids both the minimalist and maximalist approaches, in conjunction with a multidimensional framework. There is no doubt that democracy is multifaceted, but theoretical grounds are not yet sufficient to combine all the dimensions into a summary measure of democracy. Thus, this inquiry stops aggregating the distinguishable dimensions and preserves information about systematic variations of underlying dimensionality. The DPI is better suited than other measures of democracy for exploring existing democracies not only because it can capture subtle differences amongst democracies across various dimensions, but also because it overcomes several important issues of conceptualisation and measurement embedded in the previous measures.

Keywords: democratic performance; quality of democracy; measures of democracy; dimensions of democracy; Democracy Barometer; Varieties of Democracy

Introduction

After the third wave of democratisation, students of democracy started devoting a great deal of attention to the democratic performance of existing democracies. According to a conventional approach, existing democracies can also be divided into established and non-established ones, and it is believed that democratic performance of established democracies is uniform as well as superior to that of non-established ones. In fact, according to the Polity scores, one of the most widely used democracy indices, many established democracies have had the maximum level of democracy for about a century without any variations. The level of democracy in the US has been fixed at the maximum value of 10 since 1871, for instance.

Even if all established democracies are highly democratic, however, we cannot exclude the possibility that they are democratic in different ways. If we use a more sensitive measure of democracy with distinct dimensions, the variations of democratic performance across various dimensions might be detected not only in non-established democracies but also in established democracies. Campbell (2008, 8) also emphasised the importance of distinguishing between existing democracies 'for the purpose of mutually learning from democracies, innovating democracies, and developing democracies further'. The problem is that most existing measures of democracy are not sensitive enough to capture dissimilarities amongst democracies.

Democratic performance has been mainly interpreted in three different ways: regime endurance or longevity, government efficacy, and a measure of the quality of democracy (Foweraker and Landman 2002, 45). This inquiry, however, takes the third approach because considering democratic performance as a synonym of democratic quality corresponds to the object of the inquiry. Regarding the assessment of democratic performance, there have been both quantitative and qualitative approaches.

The democracy assessment framework of the International Institute for Democracy and Electoral Assistance (International IDEA), for example, is one of the representative qualitative tools (Beetham et al. 2008). Yet, this inquiry aims to evaluate democratic performance quantitatively for cross-national comparative research. Although it is difficult to figure out a perfectly objective way of designing 'a single framework for gauging democratic quality', as Diamond and Morlino (2004, 22) argued, recent attempts to measure democratic performance laid the groundwork for a more valid and reliable measure of democratic performance.

To develop a well-established framework and a measure for the assessment of democratic performance, it is necessary to deal with the issues of conceptualisation of democracy in the first place. A range of measurement issues should thereafter be addressed. In general, as Munck and Verkuilen (2002) pointed out, researchers have not paid enough attention to the problems of conceptualisation and measurement of democracy. Even worse, in the case of democratic performance across diverse dimensions, there has been sparse attention paid to these issues. Responding to this, this inquiry provides, first, a multidimensional framework for democratic performance based on a middle-range conception of democracy; second, it provides a new measure, the Democratic Performance Index (DPI), as a product of this framework. In other words, the DPI is the outcome of the conceptual and empirical critique of the existing measures of democracy, or more specifically, the Democracy Barometer (DB).

The next section discusses how to conceptualise democratic performance. The different levels of conception, principles, and dimensions of democracy are illuminated. A consolidated framework to evaluate democratic performance is then presented. The subsequent section focusses on several measurement issues, such as selection of indicators, validity, and aggregation. In doing so, this chapter presents the DPI as

having the eight dimensions of democratic performance: individual liberties, rule of law, public sphere, transparency, participation, representation, competition, and mutual constraints. This index covers 30 core democracies and 39 non-core democracies over the period from 1990 to 2012 (see Appendix 1 for a list of the countries). We also show the potential of the DPI for descriptive and statistical analyses in the next section. The final section provides discussions on the remaining issues and implications of this work.

Reconceptualising democratic performance

In this section, some fundamental issues about the conceptualisation of democratic performance are discussed. First, this section addresses whether or not a widely used conception of democracy, which is a minimalist one, is appropriate for the aim of this article, and several attempts at a middle-range conception of democracy are reviewed. Second, the linkage between the concepts, principles, and dimensions of democracy is discussed to present a coherent account of the relations between the three different levels. Last, in accordance with the concept and principles identified, the appropriate dimensions of democratic performance are extracted from the previous studies on democracy. Consequently, a new conceptual framework based on multiple dimensions is presented to discern the multifaceted characteristics of existing democracies.

A middle road

Every endeavour to assess democratic performance is, explicitly or implicitly, based on a specific conception of democracy. All the definitions of democracy can be situated at both ends of the spectrum—from a minimalist conception to a maximalist conception, or somewhere in between. Yet, minimalist concepts of democracy have achieved a

dominant position in the empirical study of democracy so far (Munck and Verkuilen 2002, 28). One prominent proponent of the minimalist approach is Adam Przeworski, who advocated ‘a “minimalist”, Schumpeterian, conception of democracy, by minimalist, Popperian, standards’ (Przeworski 1999, 23). By contrast, Dworkin (2006, 134) claimed that ‘democracy is a substantive, not a merely procedural, ideal’, which is close to the maximalist approach.

In a broad sense, Munck and Verkuilen (2002, 9) pointed out problems with both tendencies: Minimalist definitions of democracy are likely to omit the relevant attributes of democracy, while maximalist definitions that have too many attributes are accompanied by ‘no empirical referents’ or ‘little analytical use’. With the minimalist conception of democracy, for example, it is hardly possible to identify distinctions amongst established democracies because minimum requirements for democracy are supposed to be fulfilled in every established democracy. Coppedge (2002, 36) also pointed out that ‘minimalist definitions provide us with no standard for distinguishing the more democratic cases from the less democratic ones’. Regarding the maximalist approach, on the other hand, Coppedge (2002, 37) claimed that ‘one should not go further into the territory of social and economic democracy and collective citizenship rights, which in my opinion would cross the line into maximalism’. For instance, an egalitarian conception of democracy regards the distribution of economic resources as an important component. In this case, the impact of economic inequality on democracy cannot be explored.

It is therefore necessary to avoid both extremes in conceptualising democracy if we are not just interested in either regime stability or political and socioeconomic outcomes that are claimed to be part of democracy. This in-between approach is indispensable for investigating fine distinctions amongst established democracies in

terms of democratic performance.[3] There have recently been several attempts to avoid both poles, pursuing a middle-range conception of democracy (e.g., Bühlmann et al. 2012; Diamond, Green, and Gallery 2016; Lauth 2015; Munck 2016).

To begin with, Diamond, Green, and Gallery (2016, 49) advocated 'a middle way' in terms of conceptualisation and aggregation, but they just rearranged the components and indicators of the existing democracy indices,[4] proposing the three dimensions: political and electoral rights, civil liberties, and the rule of law (and the functioning of government) (Diamond, Green, and Gallery 2016, 63–4). Although they aimed to reach a middle-range conception of democracy, the dimensions identified are not significantly different from those of a minimalist conception of democracy.

Next, Lauth (2015) provided a conceptual framework for assessing democratic performance. This framework has three principles of democracy and five dimensions that are institutions of the democratic process. His approach is distinctively different from others in the sense that the dimensions are based on functionality, not attributes; however, the relevance of the functional dimensions has never been scrutinised. Moreover, the 15-field matrix of democracy, produced by the product of the three principles and the five dimensions, was tested in a few case studies conducted by Lauth (2015); each field was measured on ordinal scales, but only a few comparable data are available. Thus, this matrix is not appropriate for cross-national comparative studies.

Munck (2016) also offered democratic standards for evaluating a polity that are beyond the dimensions of a minimal definition of democracy: government decision-

[3] However, it might not be feasible to reach a consensus on a certain conception of democracy. Coppedge et al. (2011, 248) also pointed out that 'the goal of arriving at a single universally accepted measure of democracy is, in some very basic sense, impossible'. Moreover, how narrowly or broadly democracy should be conceptualised depends primarily on the purpose of research.

[4] The indices used are the Freedom House, the Economist Intelligence Unit (EIU) Democracy Index, the Bertelsmann Transformation Index (BTI), and Polity IV.

making and the social environment of politics;[5] however, this reconceptualisation has yet to proceed to the phase of measurement. Last, unlike the above attempts, Bühlmann et al. (2012) provided both a middle-range definition of democracy that incorporates a wide range of dimensions and the corresponding measurement, thereby creating the DB. On that account, this measure becomes a benchmark on which the DPI builds.

The link between concepts, principles, and dimensions

To recapitulate, this study introduces a middle-range concept of democracy that avoids both the minimalist and maximalist approaches and that is thick enough to capture subtle differences of democratic performance amongst established democracies. From this point of view, a procedural or electoral component of democracy is not considered to be sufficient, and political and socioeconomic outcomes cannot be incorporated into the dimensions of democratic performance. The next step is to discuss the relationships amongst concepts, principles, and dimensions of democracy for a coherent theoretical framework of democratic performance.

Table 1 summarises the widely used concepts of democracy in recent decades, including their principles and dimensions. As discussed above, we can see a broad spectrum of concepts between a minimalist and a maximalist one. Unlike other authors' concepts of democracy, Coppedge et al. (2011) offered six different concepts of democracy ranging from a minimalist one to a maximalist one: electoral, liberal, majoritarian, participatory, deliberative, and egalitarian democracy.[6]

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[5] Most elements of these components are captured in the dimensions of the DB.

[6] They used electoral democracy as a baseline concept of democracy for other concepts of democracy that are based on a combination of the electoral democracy and a different component of democracy. Additionally, Coppedge et al. (2015b) identified another concept of democracy: consensual democracy.

Table 1. *Concepts, Principles, and Dimensions of Democracy*

Author	Concepts	Principles	Dimensions
Altman and Pérez-Liñán (2002)	Polyarchy	None	Civil rights, Participation, Competition
Arat (1991)	Political democracy	Control	Participation, Inclusiveness, Competitiveness, Civil liberties
Beetham et al. (2008)	Political democracy	Freedom Equality Control	Participation, Authorisation, Representation, Accountability, Transparency, Responsiveness, Solidarity
Bühlmann et al. (2012)	Liberal and participatory democracy (a middle-range concept of democracy)	Freedom Equality Control	Individual liberties, Rule of law, Public sphere, Competition, Mutual constraints, Governmental capability, Transparency, Participation, Representation
Coppedge, Alvarez, and Maldonado (2008)	Polyarchy	None	Contestation, Inclusiveness
Coppedge et al. (2011)[a]	Electoral democracy Liberal democracy Majoritarian democracy Participatory democracy Deliberative democracy Egalitarian democracy	None	Competition, Horizontal accountability, Vertical accountability, Individual rights, Civil liberties, Transparency, Participation, Representation, Deliberation, Social rights
Diamond and Morlino (2004)	Ideal democracy	Freedom Equality Control	Rule of law, Participation, Competition, Vertical accountability, Horizontal accountability, Political and civil rights, Social rights, Responsiveness
Diamond, Green, and Gallery (2016)	A middle way concept of democracy	None	Political and electoral rights, Civil liberties, Rule of law (and the functioning of government)
Foweraker and Krznaric (2000, 2001)	Liberal democratic performance	Freedom Equality	Accountability, Representation, Constraint, Participation, Political rights, Civil rights, Property rights, Minority rights
Freedom House (2015)	Electoral democracy Liberal democracy	Freedom	Political rights, Civil liberties
Hadenius (1992)	Political democracy	Freedom Equality Control	Election, Political freedoms
Lauth (2015)	(Expanded) procedural democracy	Freedom Equality Control	Procedures of decision, Regulation of the intermediate sphere, Public communication, Guarantee of rights, Rules settlement and implementation[b]
Levine and Molina (2011a, 2011b)	Procedural democracy	None	Electoral decision, Participation, Accountability, Responsiveness, Sovereignty
Marshall, Gurr, and Jaggers (2014)	Institutionalised democracy	None	Executive recruitment, Executive constraints, Political competition, (Civil liberties[c])
Munck (2016)	A contextualised procedural concept of democracy	Freedom Equality	Access to government offices, Government decision-making, The social environment of politics
Vanhanen (2003)	Electoral democracy	None	Competition, Participation

Notes: [a] Each concept of democracy has its own dimensions of democracy, but in this table, these dimensions were just lumped together; principles that are equivalent to ones in other authors were not presented. [b] These five dimensions are the central institutions of the democratic process, and they are combined with democratic principles, thus resulting in a matrix of fifteen fields. [c] Coded data on civil liberties are not included in the dataset.

Regarding the concepts of democracy, as shown in Table 1, there are two distinct features relating to the principles and dimensions of democracy. One is that the concepts of democracy based on polyarchy or other minimalist definitions of democracy do not explicitly present their democratic principles (Altman and Pérez-Liňán 2002; Coppedge, Alvarez, and Maldonado 2008; Levine and Molina 2011a, 2011b; Marshall, Gurr, and Jaggers 2014; Vanhanen 2003); this point is discussed later in this paper. The other is that a minimalist concept of democracy tends to have fewer dimensions than a non-minimalist concept of democracy. It is readily interpretable by recalling that a thin and focussed concept of democracy does not contain diverse facets of democracy.

As to the principles of democracy, as can be seen in Table 1, the most commonly derived principles from democratic theories are freedom, equality, and control. For instance, Diamond and Morlino (2004, 21), whose conceptualisation is close to the maximalist approach, argued that the three main goals of an ideal democracy are 'political and civil freedom, popular sovereignty (control over public policies and the officials who make them), and political equality (in these rights and powers)'. Beetham (1999, 5) also highlighted that 'popular control and political equality are the core principles of democracy', and Beetham et al. (2008, 21) contended that 'popular liberties have been recognized as integral to the democratic principles'. Furthermore, Bühlmann et al. (2012) and Lauth (2015) explicitly considered freedom, equality, and control as the core principles of democracy.[7] To summarise, amongst the middle-range or thick concepts of democracy, there is a strong consensus that the key principles of democracy are freedom, equality, and control.

[7] Munck (2016, 5) highlighted that 'two proposals—those by Lauth and by Bühlmann et al.—are explicitly articulated in light of fundamental theoretical principles of democracy'.

A remaining question is whether a minimalist concept of democracy is also based on these principles. In many cases, as noted above, they do not explicitly appear in the literature, but it does not lead to the conclusion that democratic principles are irrelevant to the minimalist conception of democracy. From a theoretical perspective, Kelsen (1955, 18), who focussed on a procedural feature of democracy, claimed that 'freedom and equality are the fundamental ideas of democracy',[8] but he did not overlook the importance of 'a permanent control of the government through the democratic process' (Kelsen 1955, 74). Arat (1991), more fundamentally, argued that popular control of power is the most important principle of modern democracy. This interpretation corresponds to the original meaning of democracy—from the Greek word *demokratia*—that is widely construed as 'rule by the people'.[9] Hadenius (1992, 9), who supports the minimalist approach, also formulated a concept of democracy with the three principles as follows: 'Public policy is to be governed by the freely expressed will of the people whereby all individuals are to be treated as equals'. There is no doubt that any minimalist definitions of democracy are based on, at least, the core elements of the three democratic principles: free election, voting equality, and any form of popular control.

Figure 1 summarises the discussion above: First, regardless of the level of conception of democracy, freedom, equality, and control are the core democratic principles; second, the thicker a concept of democracy, the more extensive dimensions it has. This reasoning provides a coherent framework to further the conceptualisation

[8] Like many other democratic theorists, Munck (2016) also conceived of democracy as a synthesis of political freedom and political equality.

[9] However, Ober (2008, 7) interpreted *demokratia* in a different manner: 'a demos' collective capacity to do things in the public realm, [and] to make things happen'; he also highlighted that democracy is more than 'just a matter of control of a public realm'.

of democracy, and it can be used as a tool to assess existing studies on conceptualisation. From this perspective, for example, Bühlmann et al.'s (2012, 521) strategy, which deduces nine dimensions directly from the three core principles of democracy, might be problematic because the range of dimensions is determined by how broadly democracy is conceptualised rather than the democratic principles themselves. Although the relevance of the dimensions and their components should be considered in accordance with the democratic principles, this is not the same as deducting the dimensions from the principles of democracy.

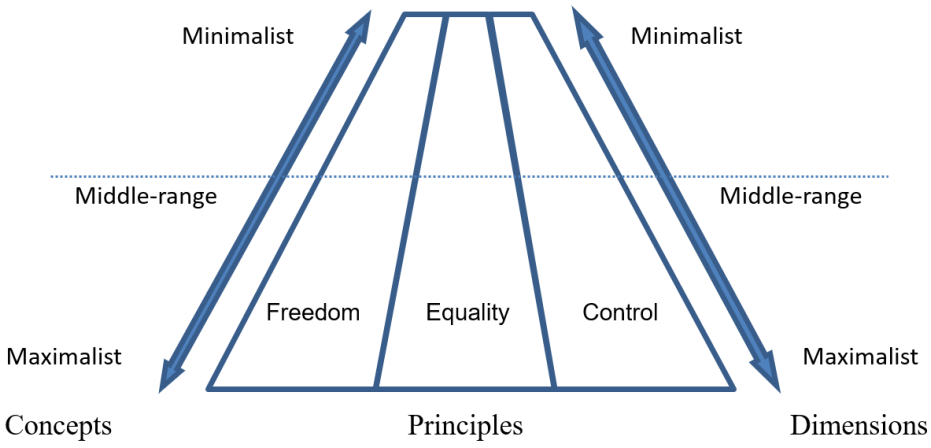

Figure 1. Concepts, principles, and dimensions of democracy.

Dimensions of democratic performance

Regarding the conceptualisation of democracy, Mazzuca (2010, 344) pointed out that many attributes or dimensions have been added 'without any justification other than the intuitive correspondence with institutional features that have a positive normative value'. Munck (2016, 2) also argued that 'most conceptualizations are rather ad hoc—offering a weak rationale for the inclusion and exclusion of conceptual attributes—and

even incoherent'. Hence, when introducing a dimension of democratic performance, we need to be wary of including a dimension that is extraneous to the democratic principles.

Consequences or causes of democracy should also be excluded from the dimensions of democracy; this is self-evident, at least, if we do not follow a maximalist approach. For example, Campbell (2008) constructed the Democracy Ranking index by mixing a political dimension with broad societal performance dimensions: gender, economy, knowledge, health, and environment. On top of this, more caution is needed when we include dimensions relating to governance in order not to 'wind up judging democracy partly on the basis of performance criteria that often have little or nothing to do with "democraticness"' (Plattner 2004, 108). Munck (2016, 1) also contended that 'the clearest thinking distinguishes the concepts of governance and quality of government from that of democracy'. That is, effective governance should be distinguished from democraticness.

To reduce the risk of an ad hoc approach, it is worth extracting the dimensions that have commonly emerged in the literature. This is a method of triangulation, in a less strict sense, since, at least, two or three authors agree with the existence of a certain dimension. To begin with, Table 1 shows a variety of dimensions of democracy. Amongst them, the most common dimensions are contestation (or competition) and inclusiveness (or participation). These two dimensions are consistently fundamental to the most widely used democracy measures from 1950 to 2000 (Coppedge, Alvarez, and Maldonado 2008), and they are firmly based on a democratic theory, Dahl's polyarchy (Coppedge, Alvarez, and Maldonado 2008, 633). Furthermore, Diamond and Morlino (2005, xl) affirmed that 'the most important general finding that emerges from the case studies is that competition and participation are engines of democratic quality'.

Accordingly, competition and participation are considered as the very basic dimensions corresponding to a minimalist concept of democracy.

Beyond the two dimensions, recently, there have been several endeavours to encompass more dimensions of democracy, as shown in Table 2. From the simple content analysis, the 10 dimensions that appear more than once in the literature have been identified and listed in the table.[10] One thing to note is that the dimension of accountability that frequently appears in the literature has not been directly reflected in the table. There are two reasons for this: First, the term accountability does not have a well-defined meaning, and thus numerous different types or conceptions of accountability encompassing other dimensions exist; second, some specific components of accountability have already been incorporated in the dimensions of competition or mutual constraints.[11] Amongst the dimensions in Table 2, however, responsiveness and social rights were excluded from the DPI since these are closely linked to political or socioeconomic outcomes that are relevant to a maximalist approach, as discussed above. Democratic responsiveness is 'doing what the citizens want' (Powell 2005, 74), and it is a political outcome dimension (Diamond and Morlino 2005). Social rights are a socioeconomic outcome dimension in which a long list of egalitarian policy goals is involved (Diamond and Morlino 2005, xxviii).

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[10] The dimensions that are unique to an author are as follows: governmental capability (Bühlmann et al. 2012), authorisation (Beetham et al. 2008), solidarity (Beetham et al. 2008), deliberation (Coppedge et al. 2011), and sovereignty (Levine and Molina 2011a, 2011b). On the other hand, Munck (2016, 5) listed recurring dimensions indicating the influence of some democratic theorists, such as Dahl and O'Donnell: competition, participation, civil rights, responsiveness, vertical and horizontal accountability, and the rule of law.

[11] The vertical control of the government (a part of vertical accountability) is implemented through competitive elections, and the horizontal and institutional control of the government (a part of horizontal accountability) is exerted by mutual constraints of constitutional powers (Bühlmann et al. 2012, 524–5).

Table 2. *Distilling the Dimensions of the DPI*

Author	Individual Liberties	Rule of Law	Public Sphere	Transparency	Participation	Representation	Competition	Mutual Constraints	Responsiveness	Social Rights
Beetham et al. (2008)		O		O	O	O	O	O	O	
Bühlmann et al. (2012)	O	O	O	O	O	O	O	O		
Coppedge et al. (2011)	O		O	O	O	O	O	O		O
Diamond and Morlino (2004)	O	O	O		O		O	O	O	O
Diamond, Green, and Gallery (2016)	O	O	O		O		O			
Foweraker and Krznaric (2000, 2001)	O		O		O	O		O		
Lauth (2015)		O	O		O		O	O		
Levine and Molina (2011a, 2011b)					O		O	O	O	
Munck (2016)			O			O	O			

Note: The basic concepts of the dimensions of democracy defined by Bühlmann et al. (2012) were employed as a benchmark against which other similar dimensions of democracy can be judged. The shaded dimensions belong to the DPI.

Table 3. *The Contents of the Eight Dimensions of the DPI*

Dimension	Component	Subcomponent
Individual Liberties	• right to physical integrity	• constitutional provisions guaranteeing physical integrity • no transgressions by the state • mutual acceptance of right to physical integrity by citizens
	• right to free conduct of life	• constitutional provisions guaranteeing right to freedom of conduct of life (religion and movement) • freedom of conduct of life (religion and movement) • effective property rights
Rule of Law	• equality before the law	• constitutional provisions for impartial courts • effective impartiality of the legal system
	• quality of the legal system	• constitutional provisions for judicial professionalism • confidence in the justice system • confidence in the police • effective independence of the judiciary
Public Sphere	• freedom to associate	• constitutional provisions guaranteeing freedom to associate • degree of association (economic interests) • degree of association (public interests)
	• freedom of opinion	• constitutional provisions guaranteeing freedom of speech • media offer • political neutrality of press system
Transparency	• no secrecy	• disclosure of party financing • political corruption (public sector, executive, legislative, and judicial)
	• provision for transparent political process	• freedom of information • informational openness • willingness for transparent communication
Participation	• equality of participation	• suffrage • non-selectivity of electoral participation • non-selectivity of alternative participation
	• effective participation	• constitutional provisions for direct democracy • rules facilitating participation • effective non-institutionalised participation
Representation	• substantive representation	• structural possibilities for inclusion of preferences • no distortion (disproportionality between vote and seat distributions and congruence between political positions among voters and party positions)
	• descriptive representation	• no legal constraints for inclusion of minorities • political power distribution across social groups, gender, socioeconomic position
Competition	• competitiveness of elections	• formal rules for competitiveness • closeness of electoral outcomes • low concentration of seats
	• openness of elections	• low legal hurdles for entry • effective contestation • effective access to resources
Mutual Constraints	• checks between three powers	• balance of checks between executive and legislative powers • balance between executive and legislative powers • judicial review
	• vertical checks of power:	• degree of federalism • subnational fiscal autonomy

Note: The basic concepts of the dimensions and their components and subcomponents defined by Bühlmann et al. (2012) were used in building the DPI; several subcomponents of the DB were modified according to the discussions in this chapter, however.

Table 3 presents a list of components and subcomponents of the eight dimensions of the DPI. The basic concepts of the eight dimensions and their key elements of the

DPI follow Bühlmann et al.'s (2012) approach. Since there is not enough room to elaborate each dimension and its contents, we refer to Bühlmann et al.'s (2012, 523–6) for a short description of the dimensions and their components of the DPI. In building the DPI, apart from the methods of standardisation and aggregation as well as the rearrangements or modifications of several subcomponents, which will be discussed in the following sections, most of the indicators in the DPI came from the DB. A full description of all the indicators can be found in the codebook of the DB (Merkel et al. 2014a) or the V-Dem (Coppedge et al. 2015c) for the variables in Appendix 2.

Table 4. *The Relation Between Principles and Dimensions of Democracy*

	The DB			**The DPI**		
	Freedom	Equality	Control	Freedom	Equality	Control
Individual Liberties	right to physical integrity / right to free conduct of life			right to physical integrity / right to free conduct of life		
Rule of Law	equality before the law / quality of the legal system				equality before the law	quality of the legal system
Public Sphere	freedom to associate / freedom of opinion			freedom to associate / freedom of opinion		
Transparency		no secrecy / provisions for transparent political process				no secrecy / provisions for transparent political process
Participation		equality of participation / effective participation			equality of participation / effective participation	
Representation		substantive representation / descriptive representation			substantive representation / descriptive representation	
Competition			competitiveness of elections / openness of elections			competitiveness of elections / openness of elections
Mutual Constraints			checks between three powers / vertical checks of power			checks between three powers / vertical checks of power
Governmental Capability			government resources / efficient implementation			

Notes: The subcomponents of each component of the DPI are listed in Table 3. The codebook of the DB (Merkel et al. 2014a) provides a detailed description of each component and its subcomponents and indicators of the DB.

The eight dimensions of the DPI are also illustrated in Table 4, which shows the differences between the DB and the DPI in terms of how the democratic principles relate to the democratic dimensions. The main purpose of the table is to show that the relations between the dimensions and the principles of the DB are not supported from the conceptual perspective. In the DPI, the range of dimensions is determined by the level of the conception of democracy, as discussed earlier, while the dimensions of the DB are directly derived from the democratic principles. Each dimension of the DB is thus connected to only one principle, but each dimension is not necessarily relevant to only one of the principles, like in the DPI, if we dismiss the deductive way of thinking and focus on the conceptual closeness between the dimensions or their components and the principles of democracy.

More specifically, the DPI is conceptually different from the DB in three main ways. First, regarding the rule of law, in principle, it is relevant to all three principles of democracy (Diamond and Morlino 2005, xv; Lauth 2015, 19; O'Donnell 2004, 32). Particularly, equality before the law, which is a component of the rule of law dimension, is closely associated with the principle of equality, not freedom. Lauth (2015, 9) also stressed that the principle of equality includes equality before the law (legal equality). The other component of the rule of law dimension, the quality of the legal system including an independent justice system, can be regarded as a condition for the principle of control rather than freedom.

Second, as for the dimension of transparency, both of its components are more likely to be part of the principle of control rather than equality. The subcomponents of the transparency dimension are disclosure of party financing, absence of corruption, freedom of information, informational openness, and transparent communication; as

Lauth (2015, 9) pointed out, these are considered as basic conditions for controlling the democratic political process.

Third, the DPI does not have the dimension of governmental capability since it is judged to be an extraneous dimension for democratic performance. In the DB, its first component, government resources, is comprised of time horizon, public support, and governmental stability; however, these are not exclusively relevant to a democratic polity. The second component, 'conditions for efficient implementation', also has nothing to do with democraticness. Particularly, one of its subcomponents, 'no anti-government action', is not congruent with the other two subcomponents (non-selectivity of alternative participation and effective non-institutionalised participation) of the participation dimension, in which participating in legitimate demonstrations is considered as a part of democratic practice. Furthermore, another subcomponent, 'independence of central bank', is problematic because 'the literature does not establish that more independence is necessarily better than less' (Debelle and Fischer 1994, 196).

Measuring democratic performance

Apart from how to conceptualise democracy, Munck and Verkuilen (2002, 15–27) detailed a variety of issues about measuring democracy (e.g., the selection of indicators and measurement level, validity, reliability, and replicability) and how to aggregate them. They concluded that existing indices of democracy, such as the Freedom House and Polity IV, have not addressed the challenges of measurement and aggregation well. Meanwhile, Bühlmann et al. (2012, 520) claimed that the DB was designed to meet these challenges and that it overcame the drawbacks of prior indices of democracy. However, as discussed in the previous section, the conceptualisation of the DB has some shortcomings. The DPI has thus been proposed.

In this section, the measurement issues of the DB are discussed, and remedies for the problems identified are suggested to construct the DPI. First, the domain of democratic performance is defined. Second, how to choose appropriate indicators is addressed. Third, an alternative method that can manage the aggregation of categorical indicators is introduced. Fourth, the measurement validity of the DB is scrutinised, and some elements of the DB are corrected to formulate the DPI. Last, aggregation and multidimensionality issues are discussed.

Domain of democratic performance

There is an important issue of the reference or domain of democratic performance that should be clarified. On the one hand, several scholars argued that what makes democracy possible should be distinguished from what makes democracy more democratic (Altman and Pérez-Liñán 2002; Diamond and Morlino 2004; Levine and Molina 2011a, 2011b; Mazzuca 2010). On the other hand, Munck (2016, 2) claimed that there is 'one single overarching concept—quality of democracy is equated to democracy—seen as applicable to all countries'. The former approach can be called a separated one, while the latter is an integrated or unified approach, on which Bühlmann et al. (2012), Coppedge et al. (2011), and Lauth (2015) are based.

This contrast has much in common with the controversy surrounding dichotomous versus continuous measures of democracy. Bollen and Jackman (1989, 618), who are strong advocates of the continuous approach, contended that 'democracy is always a matter of degree'. This inquiry also follows the integrated approach to democratic performance. Yet, this point does not really matter insofar as whether or where to draw a line between democracies and non-democracies is not involved. To put it differently,

if the domain of democratic performance is restricted to widely recognised existing democracies, in practice, there is no point in differentiating between the two approaches. One thing to note is that the DB relies on the existing democracy indices to distinguish established (core) democracies from non-established (non-core) ones (see Appendix 1).[12]

Selection of indicators

Regarding the selection of indicators, Munck and Verkuilen (2002, 15) highlighted the importance of using multiple indicators for a conceptual dimension to avoid potential biases or measurement errors associated with single indicators. It is therefore necessary to be wary of systematic biases if we use single indicators, and each measure should be cross-checked, using multiple sources. For instance, in Foweraker's Liberal Democratic Performance and Vanhanen's Polyarchy Index of Democracy (see also Table 5), each dimension draws simply on a single indicator; by contrast, the dimensions, components, and subcomponents of the DB consist of multiple measures. Additionally, in the DB, not only the existence of formal or constitutional provisions (*de jure* aspects) but also their actual performance (*de facto* aspects) is considered in selecting indicators to avoid institutional fallacies.

[12] Arbitrary or ad hoc judgements exist in a dividing line between established democracies and non-established ones. For example, Blake and Martin (2006) called a democracy a consolidated one if the Political Rights (PR) score of a country in the Freedom House is 2 or below and has lasted for 20 continuous years. Henisz and Mansfield (2006) imposed the following criteria on a stable democracy: A combined Polity IV score is 7 or above, a combined average Freedom House score is less than 3, and these scores have been maintained for the past five years. For the DB, Merkel et al. (2014b, 6) identified a country as an established democracy if it has a combined average Freedom House score of 1.5 or below and a Polity IV score of 9 or above over the 1995–2005 period; this study follows these criteria for practical reasons when it refers to the domain of established democracies.

In relation to this, there is another issue about whether or not objective indicators are better than subjective ones. For example, the DB is constructed using objective indicators (official statistics or representative surveys), excluding subjective ones (expert assessments); on the other hand, the Varieties of Democracy (V-Dem) employs both subjective and objective indicators but adopts a multiple-rater system to guarantee high-quality subjective indicators. In fact, the contrast between subjective and objective indicators should not be overstated, as Munck and Verkuilen (2002, 16) argued, because the selection of objective indicators itself cannot avoid subjective judgments. That is, there is no way to remove subjective judgements completely.

In this respect, the Vanhanen's democracy index and the DB, which rely entirely on objective indicators, are also not immune from the issue of subjectivity, although they claim that they have overcome the problem of subjective assessments. On the other hand, drawing solely on objective measures can even become a disadvantage because, according to Bollen (1993, 1210), subjective measures have the potential to capture key traits of democracy that objective measures are likely to miss.[13] In sum, the DB has significant strengths in terms of the construction of the measures at each level, but it could not make the most of reliable subjective indicators that may offer more diverse and abundant information. In the DPI, however, some indicators based on expert assessments have been employed to capture more comprehensive pictures.[14]

How to handle categorical indicators

[13] In case of repressive practices, for example, they do not tend to be objectively recorded, while expert assessments are more likely to detect them (Bollen 1993, 1210).

[14] In Appendix 2, all the variables of the DPI, except ones for constitutional provisions of direct democratic institutions, are based on expert assessments.

In practice, when categorical indicators, which mostly relate to institutional conditions, are simply normalised even if the problematic issue discussed in Appendix 3 does not exist,[15] the fewer categories they have, the more weight their minimum values lose, and the more weight their maximum values gain. For example, it remains doubtful whether or not the minimum in a three-category variable is comparable to the minimum in a six-category variable because, in the three-category variable, the minimum is a generic negative response to the question, while the minimum in the six-category variable is a highly negative response to the question. That is, if categorical indicators with different numbers of categories are normalised, their minimum or maximum values are treated as being the same even though their latent values are not likely to be equivalent.

More fundamentally, a question remains as to whether each ordinal or dichotomous value can be transformed into a continuous score. In principle, assigning a continuous value to a category by linear interpolation is not an excellent strategy since—as Stevens (1946, 679) stated, 'The linearity of an ordinal scale is precisely the property which is open to question'. In a strict sense, an ordinal or dichotomous scale cannot be simply treated as an interval scale. Accordingly, as in the DB, calculating an arithmetic mean between the normalised scores of categorical indicators that have different categories seems to be problematic.

Alternatively, categorical indicators can be appropriately aggregated by a latent trait (latent correlation) modelling, such as polychoric correlation models (Kolenikov and Angeles 2004, 2009), which can also deal with tetrachoric, biserial, and polyserial correlations. This polychoric method performs a principal component analysis based

[15] In this chapter, normalisation refers to min-max transformation, and standardisation indicates transformation in *z*-scores.

on a polychoric correlation matrix instead of a Pearson correlation matrix.[16] In the DPI, all the categorical indicators were aggregated by using this method.[17]

Improvement of content validity

Next, we turn to the issue of measurement validity. Valid measurement basically means that indicators 'meaningfully capture the ideas contained in the corresponding concept' (Adcock and Collier 2001, 530). For assessing measurement validity, Adcock and Collier (2001, 538–43) provided a framework that has three types of measurement validation: content validity, convergent/discriminant validity, and nomological/construct validity. Amongst them, nomological/construct validation does not seem to be relevant to the assessment of the democratic performance measures since causal hypotheses are not well established in this domain of research.

The content validity of the democratic performance measures, in terms of the relevance to the democratic principles, is examined in the previous section; Table 4 presents the results. Additionally, at the subcomponent level, the five significant parts of the DB were modified to make the subcomponents of the DPI more relevant and representative. First, the subcomponent, 'effective independence of the judiciary', was relocated from the component, 'equality before the law', to the other component, 'quality of the legal system'. The functioning of an independent justice system is an

[16] The Polychoric PCA module for Stata conducts this analysis.

[17] In both the DB and the DPI, there are four subcomponents based on indicators that have different measurement scales: One is ordinal and the other is interval; their correlation is called polyserial. With these scales, item response theory (IRT) models, a type of latent trait modelling designed for categorical variables, cannot be employed. To use IRT models, it is necessary to convert an interval indicator into an ordinal one, losing some information. However, if we introduce the polychoric method that can deal with every combination of binary, ordinal, and interval indicators, we can produce continuous scores without losing any information.

essential condition for effective control over office holders rather than legal equality (Lauth 2015, 9). Moreover, judicial independence is vital to the idea of separation of powers, on which the dimension of mutual constraints under the principle of control is based.

Second, the subcomponent, 'absence of corruption', was replaced by the political corruption index (*v2x_corr*) developed for the V-Dem (see Appendix 2). An indicator of the subcomponent, the Corruption Perceptions Index (CPI), captures perceptions of the extent of corruption in the public sector, and the other indicator captures the risk of corruption between politics and business. Namely, this subcomponent partly reflects overall corruption. By contrast, the political corruption index of the V-Dem incorporates all aspects of corruption, including public sector, executive, legislative, and judicial corruption. Additionally, the CPI has been published since 1995, while the political corruption index covers a far more extended period.

Third, the two indicators of the subcomponent, 'effective institutionalised participation', were removed. To begin with, voter turnout was excluded because 'turnout is conceptually distinct from liberal democracy' (Bollen 1993, 1210).[18] Furthermore, although low voter turnout may be, as Lijphart (1997) argued, closely related to unequal electoral participation, inequality in voter turnout in terms of education, income, gender, and age is properly captured in the subcomponent, 'non-selectivity of electoral participation'.[19] Thus, voter turnout is neither a conceptually

[18] Bollen (1993, 1209) also claimed that 'we cannot say that higher voter turnout means higher levels of liberal democracy'. Moreover, in this indicator, there is a systematic bias owing to compulsory voting regulations that some countries adopt. To reduce the bias, for instance, penalising countries with compulsory voting was introduced in the Economist Intelligent Unit (EIU) Democracy Index, but this type of correction is too arbitrary. Besides, it is argued that mandatory voting is not compatible with the liberal conception of democracy.

[19] If a voter turnout rate were 100%, there would be no voter turnout inequality; in a compulsory voting system, however, the voter turnout rate is around 90%, and its gaps between groups show

relevant indicator nor a better proxy for unequal participation. Next, the other indicator, 'effective use of direct democratic instruments', was discarded. In principle, referenda that are a form of direct democracy have the potential to complement representative democracy, thus promoting democracy. In practice, however, these are an established institution that only a few countries frequently use.[20] Accordingly, it might be meaningful to compare the countries where referenda are rarely or never used with the countries where referenda are often used; otherwise, there is no point in introducing this indicator. Moreover, the number of national referenda per year does not reflect the level of democracy,[21] as the frequency of referenda depends on political contexts that are extraneous to democratic performance.

Fourth, the subcomponent, 'constitutional provisions for direct democracy', was relocated from the component, 'substantive representation', to the component, 'effective participation', since the use of direct democracy is closely linked to enhancing political participation (Childers and Binder 2012; Tolbert, Bowen, and Donovan 2009). This subcomponent is also a counterpart to the subcomponent, 'rules facilitating participation', in that the former represents non-electoral participation *de jure*, while the latter represents electoral participation *de jure*. Moreover, one indicator of the subcomponent, 'constitutional provisions for direct democracy', which indicates the sum of the points for the existence of four direct democratic institutions, was

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significant variations, while turnout itself has slight variations. Accordingly, the turnout inequality measures are not greatly influenced by a systematic bias that a compulsory voting system produces in the turnout data.

[20] In the DB, amongst 70 countries, only four countries (Italy, Slovakia, Slovenia, and Switzerland) have more than five observations of referenda during the period from 1990 to 2012, whereas 46 countries never had referenda during the same time span.

[21] In this indicator, the logarithm of the number of referenda was used to reduce the effect of an additional referendum in the same country-year, but it does not change the essential point discussed above.

replaced by a new composite measure developed for the V-Dem, which is based on four categorical indicators relevant to direct popular votes; each indicator has one more category than each element of the previous indicator in the DB, thereby creating more distinction.

Last, the two subcomponents, 'adequate representation of women' and 'effective access to power for minorities', were replaced by a new subcomponent, 'political power distribution', which is composed of the three indicators developed for the V-Dem: 'power distributed by social groups', 'power distributed by gender', and 'power distributed by socioeconomic position'. The aggregation of these indicators captures actual political representation more comprehensively than the combination of the subcomponents of the DB that focus on gender and ethnic minority groups. Furthermore, the considerable proportion of the observations in several indicators of the DB, which were substituted in constructing the DPI, was missing and thus imputed rather arbitrarily.[22]

Convergent/discriminant validity

With respect to measurement validity, the remaining work aims to test convergent/discriminant validity by looking at empirical associations between the measures of the dimensions. In general, correlations between a new measure and previously established measures were examined to test this (Adcock and Collier 2001, 540). However, there are neither indicators that can be taken as a standard of reference

[22] For example, in the indicator of the DB, 'proportion of female representatives in the government', missing values constituted more than half of the data points, but they were simply imputed by values from the nearest year. Another indicator, 'political discrimination of minority groups', had missing values from 2007 to 2012 across all the countries, which were replaced by the values of 2006, and 15 countries' data were completely missing; rough estimates were assigned, however.

nor well-established indices for the dimensions of democratic performance identified in this study.

For the sake of illustration, contestation and inclusiveness, which are the two persistent dimensions of democracy extracted from the widely used indices of democracy through a principal component analysis (Coppedge, Alvarez, and Maldonado 2008), can be compared to the competition and participation dimensions of the DPI. The analysis shows that they are moderately correlated ($r = .30$ and .33, respectively).[23] This result is within the range of expectation not only because their systematised concepts are not identical, but because Coppedge, Alvarez, and Maldonado's (2008) dimensions are based on heterogeneous composite indices incorporating part of the other dimensions of the DPI, such as individual liberties and public sphere.

In addition, it is worth looking at the correlations between the dimensions (see Appendix 6). To summarise, in both the DB and the DPI, the dimension of individual liberties shows relatively strong correlations with the other dimensions, while both the participation and competition dimensions are weakly correlated with the others, and the dimension of mutual constraints is hardly associated with the others. Notwithstanding a few strong correlations, overall associations between the dimensions appear to be weak or moderate, thus providing discriminant validity to some extent. More importantly, the three dimensions under the principle of control in the DB (competition, mutual constraints, and governmental capability) are not correlated to each other at all. This fact raises a serious question whether these dimensions can be

[23] The competition and participation dimensions of the DB are also moderately correlated with the contestation and inclusiveness measures ($r = .28$ and .36, respectively).

grouped into the principle because they should be, at least, interconnected to a certain degree if they represent the same principle. This evidence contradicts the deductive logic of the DB. Consequently, aggregating these dimensions into the principle of the DB cannot be empirically supported.

This type of validity can also be explored at the component level. In the conventional guidelines for construct measurement, it is believed that within-construct correlations must be greater than between-construct correlations, and some scholars have argued that high within-construct correlations are desirable. By contrast, Briggs and Cheek (1986, 114) claimed that moderate inter-correlations (from .2 to .4) would be optimal. However, it has been demonstrated that within-construct correlations do not always exceed between-construct indicator correlations (Bollen and Lennox 1991, 308–9). Bollen and Lennox (1991) conclude that high correlation is superior to moderate or low ones for effect indicators of a single latent variable, and that the magnitude and direction of correlations do not matter for causal indicators.[24] In the DPI, the correlations between the components of each dimension are relatively moderate or strong ($r =$ .21 to .57), except for the correlation between the components of mutual constraints ($r = -.26$) (see Appendix 7). From this analysis, we can assume that there is a trade-off between horizontal and vertical checks of power, which needs more discussion.[25]

How to aggregate

[24] Bollen and Lennox (1991, 306) elucidated that a causal indicator is a term to describe the fact that the indicator determines a latent variable rather than attributing any other meanings to it; see also Bollen (1989, 222–3).

[25] The within-dimension correlations of the DB have another negative correlation in the dimension of representation ($r = -.13$), in addition to the dimension of mutual constraints ($r = -.24$).

Compared to other measurement issues, researchers have paid less attention to aggregation rules. Munck and Verkuilen (2002, 27) claimed that 'the challenge of aggregation is undoubtedly a weak point of many existing democracy indices'. Treier and Jackman (2008) pointed out that 'various indicators of democracy are combined in seemingly arbitrary ways, without any formal or explicit justification of the procedure' (201) and argued that 'there seems to be no settled method for aggregating indicators of democracy, or for evaluating justifications of these rules' (202). Thus, the way in which the indicators, subcomponents, and components of the DPI are aggregated needs to be clarified here.

Table 5 shows a range of aggregation rules of the six existing datasets.[26] In the case of the DB, the aggregation procedure at each level of aggregation is explicit (see Merkel et al. 2014b, 10–1), but it is not free from arbitrariness. In the DPI, each subcomponent value is calculated by additive aggregation using the arithmetic means of the standardised indicators, except for the subcomponents that have dichotomous or ordinal indicators, whose scores are computed by the polychoric method. Basically, this is justified by the fact that each subcomponent uses multiple sources to avoid biases or errors embedded in single indicators; full compensability between different sources can therefore be assumed. The DB also conjectures full compensability at this level, but all the indicators of each subcomponent in the DB are indiscriminately averaged under the strong assumption that categorical indicators can be treated as interval ones.

[26] Additionally, the V-Dem offers various components of democracy that constitute different models of democracy, leaving room for a high level of aggregation or different ways of aggregation to researchers. Nevertheless, its aggregation rule provided for each model of democracy is based on a mix of addition and multiplication, and the rule for each component of democracy, except for the electoral component of democracy, is either an arithmetic mean or a Bayesian factor analysis (Coppedge et al. 2015c, 43–9). These aggregation methods are also not immune to arbitrariness.

Table 5. *Aggregation Rules of the Existing Datasets on Democratic Performance*

Dataset	Dimensions	Measurement Level	Aggregation Rule		Country	Year
			Component Level	Dimension Level		
Arat (1991, 136–66)	Participation Inclusiveness Competitiveness Civil liberties	Ordinal Ratio Ordinal Interval	Addition None Addition None	Formula using multiplication, addition, and subtraction	152	1948–1982
Democracy Barometer	Individual liberties Rule of law Public sphere Competition Mutual constraints Governmental capability Transparency Participation Representation	Interval Interval Interval Interval Interval Interval Interval Interval Interval	Geometric mean Geometric mean Geometric mean Geometric mean Geometric mean Geometric mean Geometric mean Geometric mean Geometric mean[a]	Geometric mean*	70	1990–2012
Liberal Democratic Performance	Accountability Representation Constraint Participation Political rights Civil rights Property rights Minority rights	Ordinal Interval Ordinal Ratio Ordinal Ordinal, interval, ratio Ordinal Ordinal, ratio	None[b] None None None None None None None	None	40	1970–1998
Freedom House	Political rights Civil liberties	Ordinal Ordinal	Addition Addition	Arithmetic mean	205	1972–2014
Polity IV	Executive recruitment Executive constraints Political competition	Ordinal Ordinal Ordinal	Code assignment None Code assignment	Weighted addition[c]	162	1800–2014
Polyarchy Index of Democracy	Competition Participation	Ratio Ratio	None None	Multiplication	187	1810–2000

Notes: Cross-sectional or categorical (regime type) datasets were not included. [a] To be more exact, this is a variation of geometric mean, which was employed at the principle level as well. The formula reads as follows: $[\prod_{t=1}^{n}(X_t + 500)]^{\frac{1}{n}} - 500$ (Merkel et al. 2014b, 10). [b] Aggregation was not attempted even at the level of components. [c] Weighted addition for DEMOC and AUTOC is based on the component variables, not the dimensions.

As to the aggregation rule for the components, the DB performs arithmetic averaging again, while the DPI introduces a different rule since each subcomponent represents a distinct aspect of their component. In the DPI, on the one hand, the subcomponents are grouped into *de jure* and *de facto* ones, which are not completely substitutable; on the other hand, the subcomponents of each component are not fundamentally different from each other, and thus a full non-compensatory logic cannot be applied. Alternatively, geometric aggregation, which is 'an in-between solution' between full compensability and full non-compensability (OECD 2008, 104), was employed, instead of additive aggregation based on full compensability. By the same token, this rule was also applied to the aggregation of components for the dimensions of democratic performance in the DPI.

With the issue of aggregation, it is necessary to raise a question about the widely dispersed assumption that 'it is appropriate and desirable to move up to the highest level of aggregation, that is, to a one-dimensional index' (Munck and Verkuilen 2002, 27). In this paper, the aggregation process does not go beyond the dimension level. The following section explains the reason why the above assumption is not retained here.

Multidimensionality

There is a consensus amongst students of democracy that democracy is multifaceted or multidimensional, although there is no agreement about the conceptualisation of democracy, as discussed above. Regarding how to cope with multidimensionality of democracy, there are two distinct measurement strategies (Coppedge 2012, 29–30; Diamond, Green, and Gallery 2016, 48): One is to stop aggregating the distinguishable dimensions; the other is to proceed to create a summary measure of democracy,

combining all the dimensions. From the perspective of the former, Foweraker and Krznaric (2000, 780) claimed that component scores of dimensions should be kept 'as separate as conceptual clarity will permit'. Bollen and Lennox (1991, 308) also argued that 'if many facets mean many dimensions, then each dimension should be treated separately with its own set of effect indicators'.

In fact, however, the two strategies discussed above should not necessarily be mutually exclusive. Each strategy has advantages and drawbacks, and which approach is appropriate depends heavily on a given research question. As in this inquiry, if we are interested in what is really going on within a democracy, it is useful to unfold the concept of democracy and look at each dimension (Gleditsch and Ward 1997, 381). This is mainly because we may lose information about systematic variations amongst the cases or underlying dimensionality when we proceed to a higher level of aggregation (Munck and Verkuilen 2002, 22). In addition, this approach suffers less from the aggregation issue, which is fraught with many problems; we cannot see the forest for the trees, however, if we completely avoid all levels of aggregation.

Well-developed measures for each dimension of democracy are also a prerequisite for an appropriate summary index of democracy, although constructing this summary measure requires a strong theory about how the dimensions of democracy are combined, from which a mathematical formula can be derived (Coppedge 2002, 37–8). In this regard, it appears that the dimensions of the DB are rather mechanically aggregated into the three principles of democracy. This aggregation has been shown to be doubtful, according to the reconceptualisation of the DPI, as can be seen in Table 4. Accordingly, the aggregate measure of democracy in the DB, using these principles of democracy, might also be problematic. On the other hand, the DPI's reconceptualisation has yet to offer theoretical justification for aggregating the dimensions of democratic

performance. In principle, complete independence amongst the dimensions does not exist because each dimension is supposed to be derived from the same conception of democracy. However, it is challenging work to figure out how, exactly, they are interconnected.

The potential of the DPI

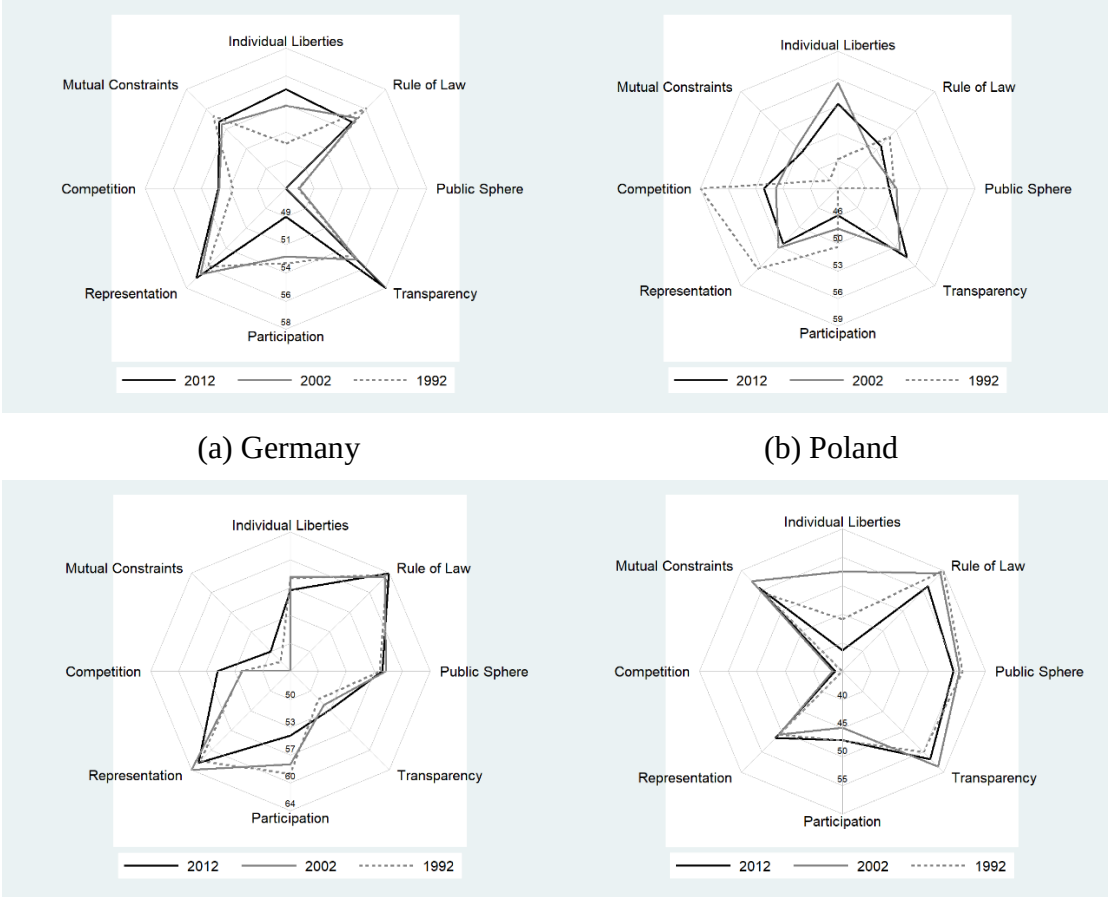
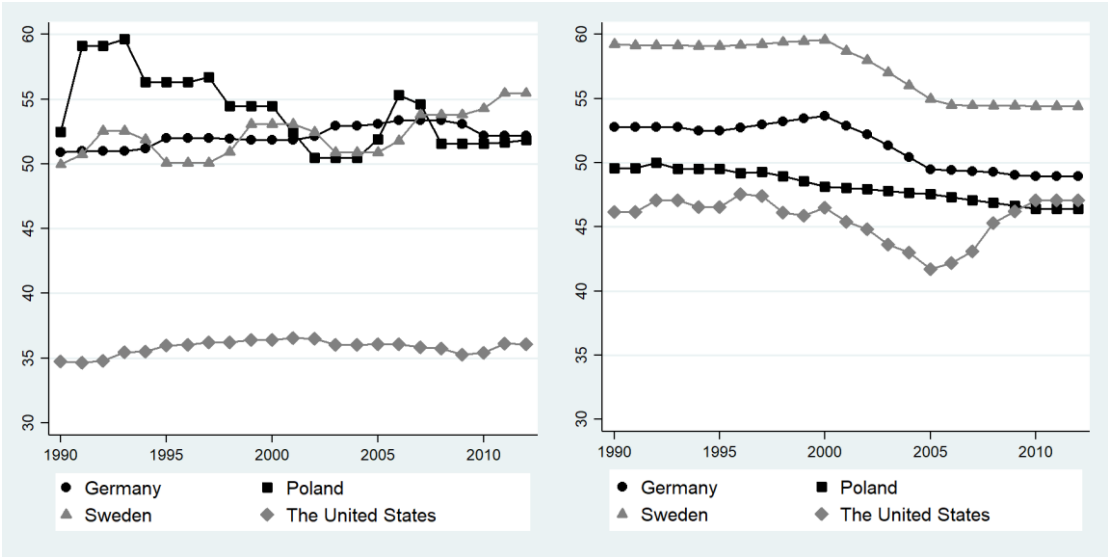


Figure 2. Comparison of democratic performance between four countries across eight dimensions. Note: The graphs used the DPI dataset for Germany, Poland, Sweden, and the United States for the years 1992, 2002, and 2012.

The different shapes of the democratic performance across countries and over time are clearly illustrated by the radar charts of Figure 2, in which the axes indicate the eight

dimensions of democracy. The four countries (Germany, Poland, Sweden, and the United States) were selected to represent each country group (Western Europe, Post-communist Europe, Nordic countries, and Anglo-Saxon countries). In these countries for the same years, for instance, the Polity scores show the highest level of democracy, except for Poland in 1992, which implies that there is no distinction in terms of the level of democracy. As Figure 2 obviously illustrates, however, the levels of democratic performance and the main features in the dimensions of the DPI considerably differ across countries and over time.

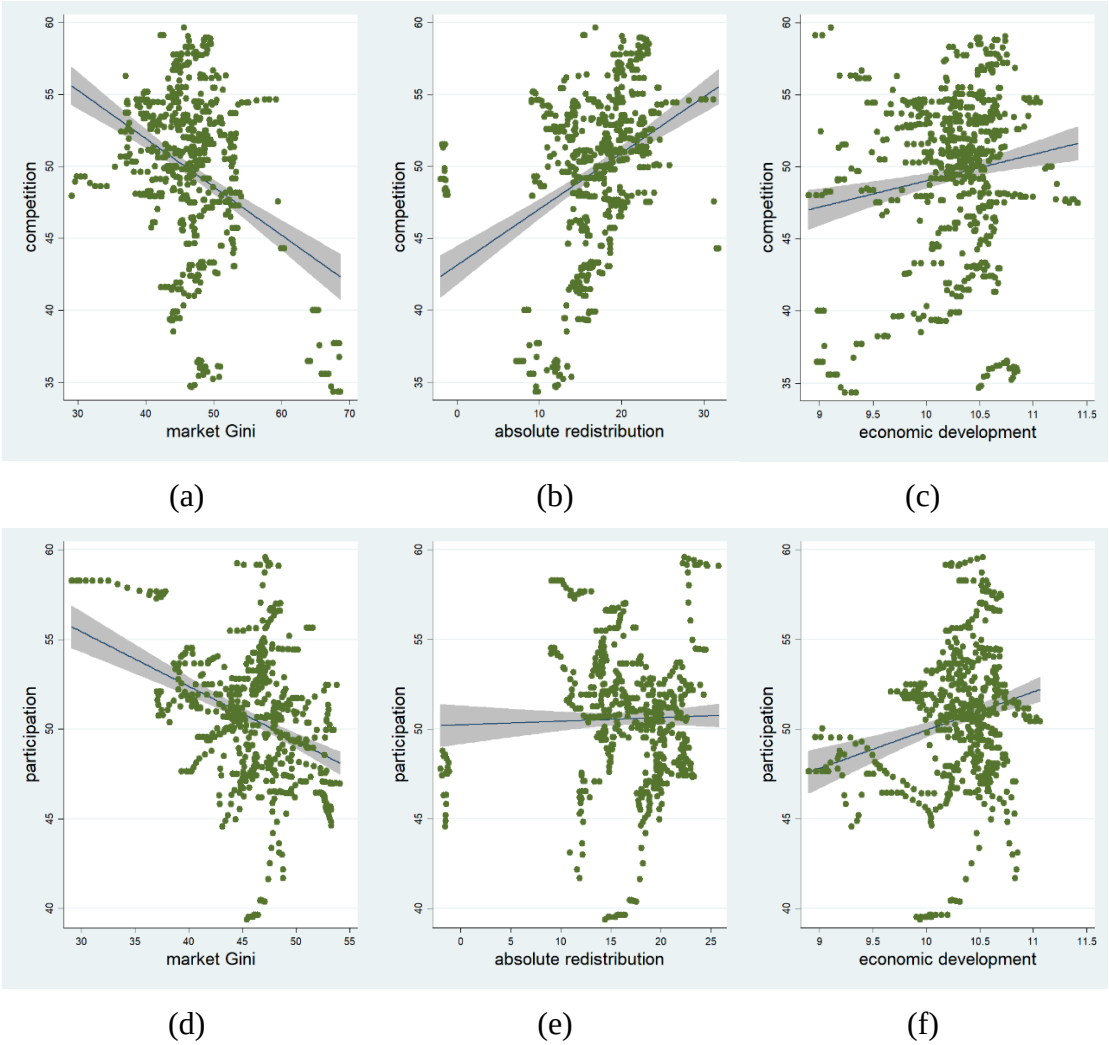


(a) Competition (b) Participation

Figure 3. Time trends of the dimensions of competition and participation in four countries. Note: The graphs used the DPI dataset for Germany, Poland, Sweden, and the United States over the period 1990–2012.

Additionally, Figure 3 displays the developments of the competition and participation dimensions across the four countries between 1990 and 2012. To illustrate the variations over time, the two dimensions were chosen because these are central components to the quality of democracy (Diamond and Morlino 2005, xl). In the

dimension of competition, for example, the United States shows a far lower level of democratic performance than the other three countries; Sweden has a higher score of participation than the others. Overall, the DPI has the potential to serve as a tool for the cross-national and longitudinal comparisons of democratic performance.



(a) (b) (c)

(d) (e) (f)

Figure 4. Correlations between democratic performance and socioeconomic variables. Notes: The graphs used the competition and participation dimensions of the DPI for 30 core democracies over the period 1990–2012. Market Gini is the Gini coefficient before taxes and transfers. Absolute redistribution is the gap between market Gini and net Gini. Economic development is expressed as the logarithm of real GDP per capita. In the graphs (d), (e), and (f), observations in Hungary and South Africa were excluded as they are outliers. The shaded area around the regression line shows the 95% confidence interval.

We now consider how socioeconomic variables most commonly tied to democracy are correlated with the dimensions of competition and participation in the DPI. Regarding the socioeconomic variables, first, economic development is represented by the logarithm of real GDP per capita based on prices that are constant across countries and over time; the data were calculated by using the GDP data taken from the Penn World Table (Feenstra, Inklaar, and Timmer 2015). Second, market Gini represents the Gini coefficient before taxes and transfers, and third, absolute redistribution is defined as the difference between market Gini and net Gini; the data were collected from the Standardized World Income Inequality Database (SWIID) (Solt 2016).

Figure 4 depicts the different relationships between these variables: Market Gini has a strong negative link with both dimensions ($r = -.34$ and $-.46$, respectively); absolute redistribution is positively related to competition ($r = .37$), but it has no relationship with participation; and economic development is positively correlated with both dimensions ($r = .15$ and .33, respectively).

We move one step further beyond the preceding correlation analysis to figure out what inferences we can draw from using the DPI as well as comparing the measure with other similar indices in empirical analyses. To this end, the three widely used variables above were employed as main independent variables in the panel data analysis, and time dummies were included in the fixed effects estimations of each panel to eliminate time-related shocks from the errors. In Panels A and B of Table 6, the competition and participation dimensions of the DPI are dependent variables. In Panels C and D of Table 6, for the sake of comparison, the participation function of the DB and the participatory component index (*v2x_partip*) of the V-Dem were employed as alternative dependent variables to the participation dimension of the DPI. In doing so,

we hope to show how the inferences depend on the measure of democracy examined; however, these tests should be treated with caution because this analysis is not a full-scale study on causal factors for democratic performance.

Table 6. *Determinants of Competition and Participation*

	core		non-core		core		non-core	
	(1) fe	(2) be	(3) fe	(4) be	(1) fe	(2) be	(3) fe	(4) be
	Panel A: competition (DPI)				Panel B: participation (DPI)			
market Gini	-0.132	-0.694	0.610	0.228	-0.179	-0.275	-0.425	-0.177
	(0.207)	(0.173)***	(0.237)**	(0.142)	(0.208)	(0.141)*	(0.175)**	(0.101)*
absolute redistribution	-0.087	0.710	-0.064	0.193	-0.221	-0.017	0.441	0.188
	(0.222)	(0.174)***	(0.314)	(0.136)	(0.513)	(0.141)	(0.215)**	(0.135)
economic development	-0.095	-5.781	1.834	1.037	-6.861	3.112	-2.769	0.209
	(3.698)	(2.393)**	(1.990)	(1.385)	(4.189)	(2.092)	(1.528)*	(1.331)
time dummies	Yes	No	Yes	No	Yes	No	Yes	No
R-squared	0.083	0.478	0.123	0.282	0.141	0.369	0.282	0.196
observations	675	675	596	596	638	638	695	695
countries	30	30	29	29	28	28	32	32
	Panel C: participation (DB)				Panel D: participation (V-Dem)			
market Gini	-0.581	-0.426	-0.984	-0.363	0.276	-0.308	0.015	0.121
	(0.346)	(0.336)	(0.391)**	(0.240)	(0.290)	(0.275)	(0.276)	(0.223)
absolute redistribution	0.390	0.038	0.957	0.309	-0.132	-0.070	-0.288	0.753
	(0.688)	(0.337)	(0.557)*	(0.320)	(0.317)	(0.275)	(0.516)	(0.297)**
economic development	-9.228	6.641	-3.458	2.293	1.520	2.501	3.931	-0.620
	(4.286)**	(5.003)	(3.604)	(3.143)	(4.860)	(4.090)	(2.436)	(2.923)
time dummies	Yes	No	Yes	No	Yes	No	Yes	No
R-squared	0.259	0.252	0.405	0.195	0.154	0.133	0.274	0.274
observations	638	638	695	695	638	638	695	695
countries	28	28	32	32	28	28	32	32

Notes: In each panel, Columns (1) and (3) report fixed effects estimations with robust standard errors clustered by country in parentheses, and Columns (2) and (4) report between effects estimations with standard errors. The period fixed effects and constant terms are not reported. In the fixed effects estimations, R-squared (within) is reported; in the between effects estimations, R-squared (between) is reported. See Appendix 1 for a list of core and non-core democracies. * significant at 10%; ** significant at 5%; *** significant at 1%.

The findings from Panels A and B indicate that the cross-sectional effects of market inequality, redistribution, and economic development on competition are significant in core democracies, while the within-country effects of the variables on participation are considerable in non-core democracies. The results from Panels B, C, and D for core

democracies show that the between-country effect of market inequality is significant only on the participation of the DPI and that the within-country effect of economic development is significant just on the participation of the DB. In brief, the effects of the variables significantly differ across the different measures of participation as well as the different dimensions of democracy.

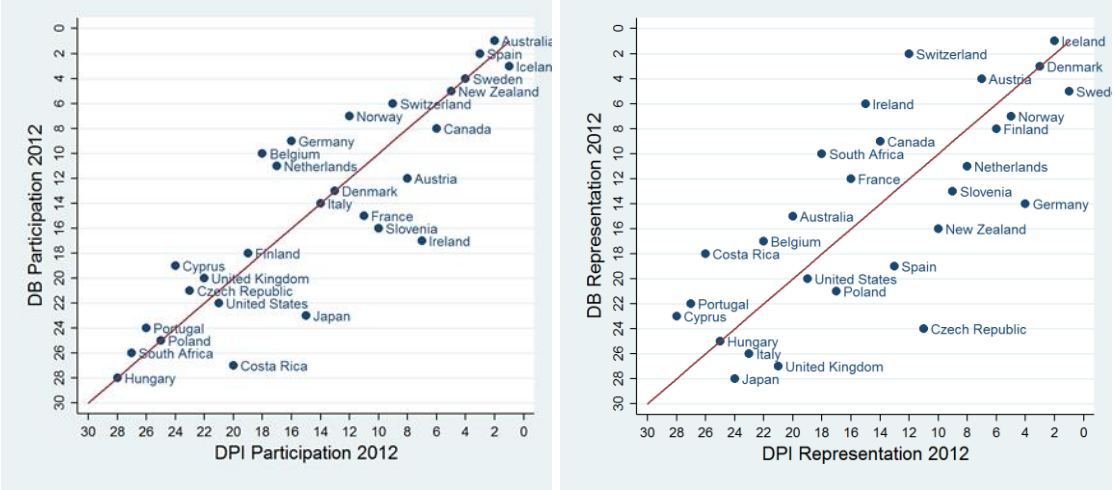


Figure 5. Comparison of country rakings between the DB and the DPI. Notes: As of 2012, country rankings of the 28 core countries for each dimension were used; amongst the 30 core countries, Luxembourg and Malta were not included because of missing data in the above dimensions of the DPI. Countries located on the diagonal line have the same ranking in both the DB and the DPI.

Additionally, the comparison of country rankings for each dimension illustrates considerable differences between the DB and the DPI. Notably, in the dimensions of participation, representation, and transparency, there exist large discrepancies in their rankings, as shown in Figure 5 (see also Appendix 5 for the other dimensions including transparency). For example, in the rankings of participation, Ireland is ranked 17th in the DB but 7th in the DPI, and the rankings of representation show that Czech Republic is ranked 24th in the DB but 11th in the DPI. These discrepancies are a product of different approaches or methods that the DPI employs, compared to those of the DB. If

we look at the transformed (normalised for the DB and standardised for the DPI) scores of each indicator before aggregating them, we can observe that the changes in the rankings depend heavily on whether to use min-max normalization, which permits comparisons in absolute terms, or standardisation in *z*-scores, which allows us to do relative comparisons. However, the normalisation process of the DB has serious drawbacks, and thus an alternative standardisation strategy was introduced for the DPI (see Appendix 3 for a more detailed explanation).

Furthermore, there are three additional reasons why the DPI is a more valid measure than the DB. First, every dimension of the DPI employs a more well-suited aggregation tool dealing with categorical indicators and a more fitting aggregation rule in building both the components and dimensions of the DPI, as discussed and justified earlier. Second, the DPI has better content validity due to the rearrangement of some inconsistent components or subcomponents of the dimensions in the DB (rule of law, transparency, participation, and representation), as discussed. Third, in the dimensions of transparency, participation, and representation, the DPI uses the more relevant and comprehensive indicators developed for the V-Dem, as discussed, instead of several indicators from the DB (see Appendix 2).

Taken together, the DPI can describe different shapes of democratic performance across advanced democracies as well as developing democracies. This new measure can also contribute to comparative democracy studies by enabling statistical analyses on the causes and consequences of democracy, which can draw different inferences from inferences using other existing measures of democracy. The distinguishing features of the DPI, including a more valid approach to constructing the index, are of particular value to empirical research on democratic performance in modern democracies.

Discussion and conclusion

This article has examined an extensive range of the conceptualisation and measurement issues of democracy, thereby creating a new measure of democratic performance with eight distinct dimensions. The DPI is better equipped than other measures of democracy for empirical research on existing democracies, as the new measure was designed to capture subtle differences amongst democracies across various dimensions, and several non-negligible problems of conceptualisation and measurement of the existing measures were addressed for creating the DPI. However, it would have been impossible to construct this measure without the DB, which was employed as a benchmark against which a better way of conceptualising and measuring democratic performance could be sought. The DB provides detailed information about its dataset, including raw data that were mainly used in constructing the DPI in combination with several indicators invented for the V-Dem. Thanks to the transparent policy and replicability of the DB, we could scrutinise and challenge the choices that generated the DB to produce a more valid measure of democratic performance.

Regarding the dimensions of democracy, Munck (2016, 10) argued that 'conceptualizations rarely make theoretical arguments, based on deductive thinking, for the inclusion and exclusion of conceptual attributes and about the relationship among attributes'. In this respect, the conceptualisations proposed by Bühlmann et al. (2012) and Lauth (2015) are distinctive from other prior attempts in that they tried to conceptualise the dimensions of democracy in a systematic and deductive manner. Particularly, the reconceptualisation of democratic dimensions for the DPI rests largely on Bühlmann et al. (2012). However, the deductive approach of the DB itself does not guarantee the appropriateness of its concept tree that indicates the direct linkages

between the principles and the dimensions of democracy, as previously discussed. The conceptual framework of the DPI, as shown in Table 4, is the outcome of criticism of the DB in terms of conceptualisation.

There remains much room for development in how democratic performance and its dimensions are conceptualised. Even amongst scholars who pursue any middle ground between a minimalist approach and a maximalist approach towards the conception of democracy, there might be no general agreement on the dimensions to include but also on how to define them. It would not be surprising, considering that debates over dimensions that are referred to as those of a minimalist definition of democracy are still on-going. Nonetheless, as illustrated in Table 2, a consensus on the range of dimensions, at least, to some degree, can be found in the recent literature, resulting in the eight dimensions of the DPI. However, the way in which each dimension is formulated considerably varies by author.

The DPI and its framework have the potential to be instruments to further the theoretical and empirical study of democracy. Priority may be given to the following topics for future research, for instance. First, the DPI shows various facets of democracy as well as their dynamics, and it challenges conventional beliefs that established democracies are uniformly superior to non-established democracies in terms of democratic performance in each dimension. As illustrated in Appendix 4, overall levels of competition and mutual constraints in non-established democracies are higher than in established democracies, albeit slightly. This empirical evidence needs to be explained theoretically in future work if the features are not due to a few influential cases.

Second, the theoretical and empirical literature on democratic performance in existing democracies is at an early stage, and hence there are no well-established

hypotheses, let alone empirical evidence, about the causes and consequences of democratic performance. However, a multidimensional measure of democratic performance developed in this inquiry can be the groundwork for investigating the relationships between democratic performance and important socioeconomic factors in the political economy. The simple panel data analysis reported in Table 6 shows the potential of the DPI for future comparative democracy research.

Last, the framework of the DPI illuminates the close link between a middle-range concept of democracy and its dimensions, both of which are related to democratic principles. This approach can be applied to an investigation into political inequality, which has become a growing concern even in advanced democracies. Political inequality is a counterpart of one democratic principle, political equality, but there is a dearth of empirical research on it, owing to the difficulties of its conceptualisation and measurement. For example, Dubrow's (2015) strategy tackling this issue is close to a maximalist approach that encompasses equality of outcomes whose empirical referents are rare. However, if a middle road between a minimalist concept of political inequality, such as voting equality, and a maximalist concept of political inequality, including equality of outcomes, is pursued, which is the same approach as in the DPI, it would be feasible to formulate a middle-range concept of political inequality with its empirical measures. The dimensions or components of the DPI might also help construct a measure of political inequality.

The DPI dataset and supplementary materials

The DPI dataset and supplementary materials are available at http://doi.org/10.3886/E101244V2.

Appendix 1. Countries in the DB and DPI datasets

Core countries (n = 30)[a]		**Non-core countries** (n = 40)[b]	
Australia	Norway	Albania	Lithuania
Austria	Poland	Argentina	Macedonia
Belgium	Portugal	Bolivia	Mexico
Canada	Slovenia	Bosnia-Herzegovina	Moldova
Costa Rica	South Africa	Brazil	Montenegro
Cyprus	Spain	Bulgaria	Nicaragua
the Czech Republic	Sweden	Chile	Panama
Denmark	Switzerland	Colombia	Paraguay
Finland	the United Kingdom	Croatia	Peru
France	the United States	Dominican Republic	Philippines
Germany		Ecuador	Romania
Hungary		El Salvador	Serbia
Iceland		Estonia	Slovakia
Ireland		Greece	South Korea
Italy		Guatemala	Taiwan
Japan		Honduras	Thailand
Luxembourg		India	Turkey
Malta		Israel	Ukraine
the Netherlands		Kosovo[c]	Uruguay
New Zealand		Latvia	Venezuela

Notes: [a] The selection criterion for the core countries is a combined and averaged Freedom House score of 1.5 or below and a Polity IV score of 9 or above over the 1995–2005 period. [b] The selection criterion for the non-core countries is a combined and averaged Freedom House score of 3.5 or below and a Polity IV score of 6 or above during the same time span (Merkel et al. 2014b, 6). [c] Kosovo was not included in the DPI owing to missing data.

Appendix 2. List of variables substituted

Dimension	The DB		The DPI		
Transparency	*Corrup*	Assessment of corruption within the political system	*v2x_pubcorr*	Public sector corruption index	*v2x_corr*: aggregated by arithmetic mean
	CPI	Overall extent of corruption in the public and political sectors	*v2x_execorr*	Executive corruption index	
			v2lgcrrpt	Indicator for legislative corruption	
			v2jucorrdc	Indicator for judicial corruption	
Participation	*Dirdem*	Constitutional provisions of four direct democratic institutions	*v2ddvotcon*	Constitutional changes popular vote	*Dirdem*: aggregated by Polychoric PCA[a]
			v2ddlegpl	Plebiscite permitted	
			v2ddlegci	Initiatives permitted	
			v2ddlegrf	Referenda permitted	
Representation	*Womrep*	Proportion of female representatives in parliament	*v2pepwrsoc*	Power distributed by social group	*REP_DR2*: aggregated by geometric mean
	Womgov	Proportion of female representative in government	*v2pepwrgen*	Power distributed by gender	
	Poldismin	Index of political discrimination of minority groups	*v2pepwrses*	Power distributed by socioeconomic position	
	Minpower	Access to central power by ethnic minority groups			

Notes: All the indicators of the DPI listed above, except for *Dirdem* and *REP_DR2*, came from the V-Dem (Coppedge et al. 2015a). [a] The Polychoric PCA module for Stata performs a principal component analysis based on a polychoric correlation matrix.

Appendix 3. Normalisation of the DB versus standardisation of the DPI

The DB employs the 'best/worst-practice' scaling method, by which the lowest value for all indicators, including both interval and ordinal or dichotomous ones, within the blueprint sample (330 country-year observations for the 30 core democracies) was rescaled to 0, and the highest value was rescaled to 100 (Merkel et al. 2014b, 6). The values of other country-years were rescaled in accordance with this scale; values below 0 imply poorer democratic performance than the poorest performance within the sample, whereas values above 100 signify better performance than the best in the sample. In this respect, Merkel et al. (2014b, 7) claimed that the DB has 'the relative scale without fixed minima and maxima'. However, this is not the case for many ordinal indicators as well as all the dichotomous ones, which have no further categories with the potential to be alternative minima or maxima.

Moreover, some minimum values of ordinal indicators that have three categories were rescaled to -100, which is likely to cause a systematic bias. For instance, the indicator, 'Constrel', has three categories; the category '0' indicates that religious freedom is neither mentioned in the constitution nor guaranteed by a binding treaty, and a score of -100 is assigned to this category. In the same subcomponent, the other indicator, 'Constfreemov', is dichotomous; the category '0' also shows that freedom of movement is neither mentioned in the constitution nor guaranteed by a binding treaty, but a score of 0 is assigned to it. In this case, it is reasonable that the category '0' in both indicators has a similar level rather than having significantly different scores (-100 and 0) whose difference is the same as the scores between the category '0' and the category '1', which indicates constitutional provisions guaranteeing freedom of movement.

This inconsistency comes from the fact that the 'best/worst-practice' scaling method was mechanically applied to all the indicators regardless of the level of measurement. The best alternative is to introduce fine-grained interval indicators so that they can easily be normalised or standardised; however, it is not feasible, at least, in the immediate future. The remaining alternative is, on the one hand, to get rid of the boundary restricted to the blueprint sample; on the other hand, researchers could deal with categorical indicators more appropriately, thus generating continuous scores at the subcomponent level to be standardised. Accordingly, at the subcomponent level of the DPI, it can be ensured that all the aggregate scores are continuous.

Before aggregating the subcomponents, however, it is necessary to bring all the variables into the same unit. There are two conventional approaches to this. One is to use min-max normalisation. The DB's method is a variation of this normalisation. The other is to compute *z*-scores with a mean of zero and a standard deviation of one. In general, each approach has pros and cons, but for the DPI, the latter approach is more appropriate for these reasons: First, it avoids introducing aggregation distortions that stem from differences amongst the means of interval indicators and subcomponents; second, when we use *z*-scores, unlike min-max normalisation, new data are not bounded because each *z*-score is relative to the other units. Moreover, from the comparative perspective, in which an absolute standard rarely exists, this approach is more reasonable.

Nonetheless, *z*-scores can be rather cumbersome to handle because half of them are expected to be negative. The DPI hence employs a linear transformation of a *z*-score with a mean of 50 and a standard deviation of 10, which is called the *T*-score (see Neukrug and Fawcett 2014, 133), to solve the problem of negative numbers and allow geometric averaging that requires positive values. A *T*-score is calculated from a *z*-score

by using this formula:

$$T = (z \times 10) + 50$$

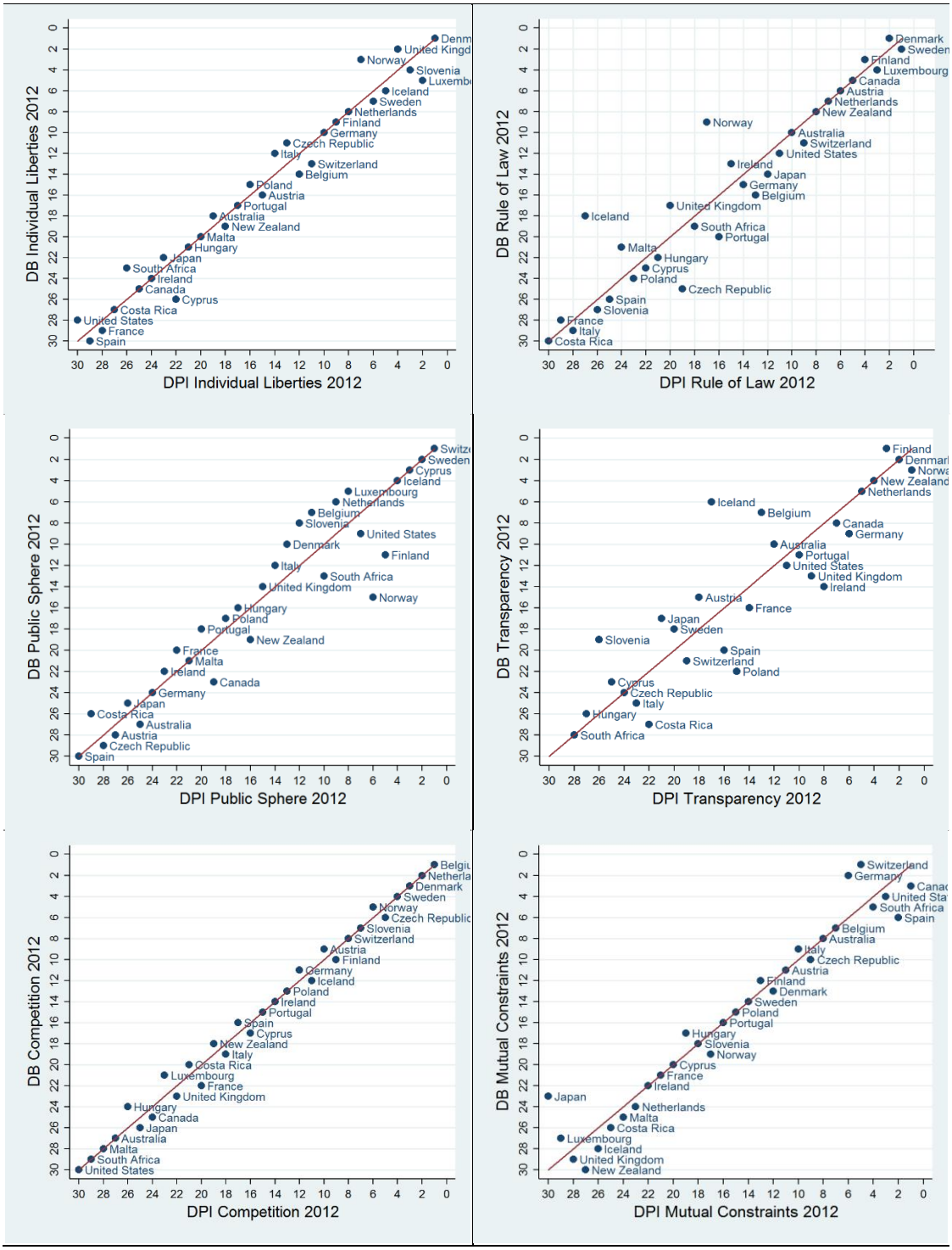
Despite this transformation, a few extreme outliers emerged, whose values were zero or below. In these cases, they were recoded to 0.1 before proceeding to geometric aggregation; in the normalisation process of the DB, however, this winzorisation for the outliers was not carried out, thereby causing some distortions. According to the rules above, each interval indicator was standardised before aggregating the indicators into the subcomponents, and each aggregate score of a subcomponent produced by polychoric correlation models was standardised before aggregating the subcomponents into the components.

Appendix 4. Descriptive statistics for dimensions of democratic performance

The DB		observations	mean	std. dev.	min	max	skewness	kurtosis
Core	INDLIB	686	81.15	13.12	-15.08	100.13	-1.81	11.72
	RULEOFLAW	686	66.18	15.05	23.73	96.43	-0.23	2.38
	PUBLIC	686	40.19	16.28	0.75	68.23	-0.17	1.71
	TRANSPAR	686	63.15	16.16	18.58	91.42	-0.45	2.42
	PARTICIP	686	50.60	10.05	22.81	77.53	0.06	2.90
	REPRES	686	54.91	9.62	28.84	79.98	0.20	2.52
	COMPET	686	59.03	13.55	22.40	82.77	-0.69	2.87
	MUTUCONS	686	50.14	13.20	27.89	76.53	0.46	2.04
	GOVCAP	686	68.04	9.60	29.36	87.33	-0.43	2.67
Non-core	INDLIB	790	58.95	13.71	1.66	92.33	-0.62	3.74
	RULEOFLAW	721	31.58	15.42	-4.85	75.09	0.19	2.85
	PUBLIC	545	28.17	13.44	0.09	59.20	0.59	2.20
	TRANSPAR	708	39.08	14.77	-11.09	75.81	-0.05	2.71
	PARTICIP	757	47.87	9.69	22.48	71.49	-0.09	2.38
	REPRES	711	41.60	7.19	21.18	59.61	0.23	2.79
	COMPET	658	59.58	12.10	22.84	85.44	-0.09	2.72
	MUTUCONS	685	50.39	14.37	26.28	101.37	1.02	3.24
	GOVCAP	735	50.54	9.40	19.45	78.11	-0.07	3.47
Total	INDLIB	1476	69.27	17.41	-15.08	100.13	-0.53	3.53
	RULEOFLAW	1407	48.45	23.05	-4.85	96.43	-0.01	2.11
	PUBLIC	1231	34.87	16.22	0.09	68.23	0.22	1.74
	TRANSPAR	1394	50.93	19.59	-11.09	91.42	-0.02	2.27
	PARTICIP	1443	49.17	9.96	22.48	77.53	0.00	2.70
	REPRES	1397	48.13	10.77	21.18	79.98	0.44	2.74
	COMPET	1344	59.30	12.86	22.40	85.44	-0.46	2.88
	MUTUCONS	1371	50.26	13.79	26.28	101.37	0.78	2.77
	GOVCAP	1421	58.99	12.91	19.45	87.33	-0.06	2.40
The DPI		observations	mean	std. dev.	min	max	skewness	kurtosis
Core	INDLIB	686	53.57	4.73	10.53	59.93	-3.07	25.15
	RULEOFLAW	686	54.36	5.17	41.96	64.72	0.01	2.16
	PUBLIC	686	51.55	4.81	37.22	61.11	0.01	2.12
	TRANSPAR	640	53.70	4.76	41.05	62.57	-0.48	2.53
	PARTICIP	640	50.10	4.64	24.49	59.58	-1.59	10.22
	REPRES	640	53.35	4.25	40.51	63.77	0.07	3.08
	COMPET	686	49.52	5.72	34.34	59.66	-0.83	3.15
	MUTUCONS	686	49.25	4.24	38.75	57.67	-0.05	2.45
Non-core	INDLIB	789	46.11	4.89	13.00	57.27	-1.63	10.92
	RULEOFLAW	721	45.40	3.98	35.03	56.73	0.05	2.91
	PUBLIC	545	47.51	3.62	36.57	55.93	0.29	2.19
	TRANSPAR	775	46.32	4.77	32.51	59.42	0.16	3.62
	PARTICIP	746	49.05	4.12	38.89	58.42	-0.17	2.18
	REPRES	797	46.23	3.88	33.58	56.73	-0.10	3.37
	COMPET	658	49.73	5.31	17.04	60.00	-0.64	4.86
	MUTUCONS	685	49.70	4.57	39.62	65.20	0.92	3.21
Total	INDLIB	1475	49.58	6.09	10.53	59.93	-1.13	7.50
	RULEOFLAW	1407	49.77	6.42	35.03	64.72	0.30	2.41
	PUBLIC	1231	49.76	4.77	36.57	61.11	0.32	2.31
	TRANSPAR	1415	49.66	6.02	32.51	62.57	-0.02	2.39
	PARTICIP	1386	49.54	4.40	24.49	59.58	-0.89	6.42
	REPRES	1437	49.40	5.38	33.58	63.77	0.16	2.84
	COMPET	1344	49.62	5.52	17.04	60.00	-0.75	3.89
	MUTUCONS	1371	49.47	4.41	38.75	65.20	0.50	3.01

Notes: The core countries are 30 established democracies, and the non-core countries are 40 (or 39) other democracies (see Appendix 1). Each sample consists of country-year (from 1990 to 2012) observations.

Appendix 5. Comparison of country rakings between the DB and the DPI



Notes: As of 2012, country rankings of the 30 core countries for each dimension were used. Countries located on the diagonal line have the same ranking in both the DB and the DPI.

Appendix 6. Correlations between dimensions

The DB	INDLIB	RULEOFLAW	PUBLIC	TRANSPAR	PARTICIP	REPRES	COMPET	MUTUCONS	GOVCAP
INDLIB	1.00								
RULEOFLAW	**0.63**	1.00							
PUBLIC	**0.55**	**0.36**	1.00						
TRANSPAR	**0.56**	**0.70**	**0.22**	1.00					
PARTICIP	**0.17**	**0.31**	0.04	**0.22**	1.00				
REPRES	**0.60**	**0.63**	**0.39**	**0.49**	**0.36**	1.00			
COMPET	**0.18**	0.03	**0.21**	**0.19**	**0.15**	**0.10**	1.00		
MUTUCONS	**-0.09**	0.01	**-0.13**	0.00	**0.11**	**0.07**	0.00	1.00	
GOVCAP	**0.57**	**0.77**	**0.31**	**0.53**	**0.35**	**0.60**	-0.06	-0.04	1.00

The DPI	INDLIB	RULEOFLAW	PUBLIC	TRANSPAR	PARTICIP	REPRES	COMPET	MUTUCONS
INDLIB	1.00							
RULEOFLAW	**0.62**	1.00						
PUBLIC	**0.52**	**0.43**	1.00					
TRANSPAR	**0.57**	**0.68**	**0.22**	1.00				
PARTICIP	**0.22**	**0.24**	**0.11**	**0.11**	1.00			
REPRES	**0.60**	**0.68**	**0.46**	**0.61**	**0.37**	1.00		
COMPET	**0.23**	0.06	**0.15**	**0.22**	**0.09**	**0.22**	1.00	
MUTUCONS	**-0.12**	0.01	**-0.09**	0.01	0.05	0.03	0.03	1.00

Note: Coefficients printed in bold are significant ($p < .01$).

Appendix 7. Correlations between components of dimensions

The DB		INDLIB		RULEOFLAW		PUBLIC		TRANSPAR		PARTICIP		REPRES		COMPET		MUTUCONS		GOVCAP	
		IL_PHIN	IL_SELFU	RL_EQL	RL_QUAL	PS_FRAS	PS_FROP	TR_NOSEC	TR_PTPP	PAR_EQPA	PAR_EFPA	REP_SR	REP_DR	CO_COMP	CO_OPEN	MC_CHECK	MC_VERT	GC_GORE	GC_CEIM
INDLIB	IL_PHIN	1.00																	
	IL_SELFU	**0.49**	1.00																
RULEOFLAW	RL_EQL	**0.49**	**0.64**	1.00															
	RL_QUAL	**0.32**	**0.58**	**0.76**	1.00														
PUBLIC	PS_FRAS	**0.31**	**0.45**	**0.36**	**0.34**	1.00													
	PS_FROP	**0.52**	**0.46**	**0.29**	**0.24**	**0.63**	1.00												
TRANSPAR	TR_NOSEC	**0.30**	**0.32**	**0.47**	**0.48**	-0.00	-0.00	1.00											
	TR_PTPP	**0.44**	**0.60**	**0.66**	**0.61**	**0.40**	**0.34**	**0.41**	1.00										
PARTICIP	PAR_EQPA	**-0.10**	**-0.08**	-0.04	0.03	0.02	**-0.21**	-0.01	-0.04	1.00									
	PAR_EFPA	**0.31**	**0.31**	**0.45**	**0.42**	**0.16**	**0.09**	**0.17**	**0.38**	**0.28**	1.00								
REPRES	REP_SR	**0.11**	**0.12**	0.04	**0.07**	**-0.12**	**0.09**	**-0.10**	0.01	**-0.09**	**0.08**	1.00							
	REP_DR	**0.45**	**0.57**	**0.62**	**0.61**	**0.47**	**0.33**	**0.31**	**0.66**	**0.18**	**0.43**	**-0.13**	1.00						
COMPET	CO_COMP	**0.26**	0.05	**0.08**	**0.09**	**0.08**	**0.20**	**0.13**	**0.17**	-0.02	**0.15**	-0.05	**0.17**	1.00					
	CO_OPEN	**0.26**	-0.03	-0.00	-0.04	**0.13**	**0.19**	**0.16**	**0.15**	**0.13**	**0.12**	0.02	0.06	**0.38**	1.00				
MUTUCONS	MC_CHECK	0.01	**-0.19**	**-0.21**	**-0.33**	**-0.17**	-0.04	**-0.19**	**-0.21**	-0.06	**-0.27**	**-0.13**	**-0.13**	0.03	**0.09**	1.00			
	MC_VERT	**-0.16**	**0.11**	**0.14**	**0.13**	-0.02	-0.04	**0.10**	0.06	**0.12**	**0.20**	**0.08**	**0.13**	-0.02	-0.05	**-0.24**	1.00		
GOVCAP	GC_GORE	**0.19**	**0.27**	**0.33**	**0.44**	**0.16**	**0.16**	-0.01	**0.24**	-0.01	**0.22**	0.01	**0.40**	-0.02	**-0.21**	**-0.10**	0.02	1.00	
	GC_CEIM	**0.44**	**0.61**	**0.75**	**0.70**	**0.34**	**0.22**	**0.44**	**0.63**	**0.10**	**0.50**	**0.08**	**0.57**	**0.07**	-0.03	**-0.34**	**0.14**	**0.36**	1.00

The DPI		INDLIB		RULEOFLAW		PUBLIC		TRANSPAR		PARTICIP		REPRES		COMPET		MUTUCONS	
		IL_PHIN	IL_SELFU	RL_EQL	RL_QUAL	PS_FRAS	PS_FROP	TR_NOSEC	TR_PTPP	PAR_EQPA	PAR_EFPA	REP_SR	REP_DR	CO_COMP	CO_OPEN	MC_CHECK	MC_VERT
INDLIB	IL_PHIN	1.00															
	IL_SELFU	**0.52**	1.00														
RULEOFLAW	RL_EQL	**0.50**	**0.52**	1.00													
	RL_QUAL	**0.37**	**0.60**	**0.57**	1.00												
PUBLIC	PS_FRAS	**0.21**	**0.44**	**0.34**	**0.42**	1.00											
	PS_FROP	**0.51**	**0.48**	**0.30**	**0.28**	**0.47**	1.00										
TRANSPAR	TR_NOSEC	**0.39**	**0.41**	**0.38**	**0.55**	-0.05	0.05	1.00									
	TR_PTPP	**0.38**	**0.55**	**0.47**	**0.63**	**0.44**	**0.29**	**0.45**	1.00								
PARTICIP	PAR_EQPA	-0.00	-0.04	-0.02	0.01	**0.10**	**-0.14**	-0.05	-0.00	1.00							
	PAR_EFPA	**0.30**	**0.26**	**0.26**	**0.30**	0.08	**0.11**	**0.11**	**0.28**	**0.25**	1.00						
REPRES	REP_SR	**0.15**	**0.32**	**0.20**	**0.28**	**0.16**	**0.28**	0.05	**0.28**	**-0.09**	**0.13**	1.00					
	REP_DR	**0.51**	**0.61**	**0.55**	**0.69**	**0.40**	**0.36**	**0.49**	**0.63**	**0.24**	**0.44**	**0.21**	1.00				
COMPET	CO_COMP	**0.28**	**0.11**	**0.12**	0.07	0.04	**0.21**	**0.16**	**0.19**	-0.00	0.03	**0.09**	**0.21**	1.00			
	CO_OPEN	**0.24**	0.04	0.05	-0.06	0.01	**0.12**	**0.20**	0.07	**0.17**	**0.10**	**-0.13**	**0.22**	**0.37**	1.00		
MUTUCONS	MC_CHECK	-0.05	**-0.23**	**-0.10**	**-0.36**	**-0.18**	-0.03	**-0.15**	**-0.17**	-0.03	**-0.28**	**-0.15**	**-0.22**	**0.07**	0.03	1.00	
	MC_VERT	**-0.13**	**0.13**	**0.20**	**0.15**	**0.09**	-0.05	**0.10**	**0.10**	**0.10**	**0.24**	0.06	**0.19**	-0.02	-0.01	**-0.26**	1.00

Notes: Within-dimension correlation coefficients are highlighted. Coefficients printed in bold are significant ($p < .01$).

CHAPTER 2
The Redistribution Hypothesis Revisited with Perceived Inequality

Abstract

It is a long-standing puzzle whether or not changes in economic inequality lead to changes in redistribution. However, there has been a lack of conclusive evidence about this relationship. Moreover, redistributive preferences as an intervening factor between inequality and redistribution, which are taken for granted implicitly or explicitly in redistribution theories, have been largely overlooked in the existing analyses. Besides, recent comparative studies of inequality and redistribution have started paying attention to inequality perceptions that deviate from actual inequality. Thus, this inquiry aims to reconstruct the classical redistribution theory by employing perceived inequality and preferences for redistribution and to test the reformulated redistribution hypotheses. One of the most challenging efforts for the analysis is to develop a country-level measure of perceived inequality. To this end, the Gini coefficient of perceived social position (perceived Gini) was first created by using data from 16 rounds of the International Social Survey Programme (ISSP 1987 to 2014), covering 33 OECD countries. The empirical results show robust evidence that perceived inequality, not actual inequality, is significantly associated with redistributive preferences, while preferences for redistribution do not translate into any type of redistribution.

Keywords: redistribution; redistributive preferences; perceived inequality; perceived Gini; market inequality; Meltzer-Richard model

Introduction

Is Robin Hood, a heroic outlaw who robs from the rich to give to the poor, reappearing in modern democracies? If so, does his band exert more power in a more unequal society? Put differently, does a government, portrayed as the popular folk figure above, play an active role in redistributing economic resources to reduce the gap between the rich and the poor? Are redistributive efforts increasing as the gap is widening? In recent decades, these questions have been at the heart of the politics of inequality and redistribution, but there have been no clear-cut answers to them so far. Many political economists have tried to solve the puzzle of redistribution under the assumption that actual reality straightforwardly translates into its perception and then interacts with other structural factors, following a materialist approach. However, well-known facts in psychology have recently secured attention in the study of inequality: First, there is a mismatch between actual reality and its perception; second, the perceptual world rather than the real world dictates people's attitudes or behaviours. These evident facts have long been ignored in exploring the dynamics of inequality and redistribution.

This article revisits the classical redistribution theory and provides empirical evidence that does not support the standard theory. The long-standing redistribution hypothesis,[27] derived from the Meltzer-Richard (1981) model, assumes a close association between actual economic inequality and redistribution. This theory presupposes that increasing market inequality leads to more demand for redistribution, thereby resulting in more redistribution; however, the posited mechanism that support for redistribution links inequality to redistribution has not been fully clarified or

[27] Milanovic (2010) proposed to distinguish the redistribution hypothesis from the median voter hypothesis because the former represents a broader hypothesis than the hypothesis based on the position of the median voter.

explored in previous studies. To test this redistribution theory, many studies have simply examined the effect of market inequality on redistribution without taking the mechanism into account. By contrast, this paper investigates the role of redistributive preferences in connecting inequality and redistribution. On the other hand, research in the field of inequality has produced substantial evidence that perceived inequality is clearly distinguishable from actual inequality[28] and that the former, rather than the latter, plays a decisive role in shaping attitudes towards redistribution.

The primary research question of this paper is whether or not the standard model of redistribution is supported when redistributive preferences are considered as an intervening factor between actual or perceived inequality and redistribution at the country level. To answer this question, one of the critical things is to develop a more valid and reliable measure of perceived inequality than previous ones, which is comparable to actual inequality in a country. Thus, for this inquiry, the perceived Gini, short for the Gini coefficient based on the distribution of perceived social position, was constructed. The results of a country-level analysis show that, first, perceived inequality rather than actual inequality significantly affects redistributive preferences; second, the impact of redistributive preferences on redistribution is negligible. Accordingly, provided that public support for redistribution is considered as a linking

[28] In general, there are four types of (in)equality commonly identified in the literature: ontological equality, equality of opportunity, equality of condition, and equality of outcome (Turner 1986, 34–6). Amongst them, both equality of opportunity, such as social mobility, and equality of outcome, such as income (in)equality, are most frequently employed in empirical studies. This classification can be applied to perceptions of inequality as well (e.g., perceived inequality of opportunity and perceived inequality of outcome). It should be noted that, in the present study, perceived inequality is only construed as perceived inequality of outcome rather than perceived inequality of opportunity. The latter is a subject for separate research.

mechanism between inequality and redistribution, it can be argued that the traditional redistribution theory should be completely reconsidered.

In the remainder of this paper, the classical redistribution hypothesis is redefined with the explicit role of redistributive preferences, and the importance of perceived inequality is discussed in relation to preferences for redistribution in more detail. Next, the alternative redistribution hypotheses incorporating perceived inequality and redistributive preferences are developed. The limitations of existing measures of perceived inequality are also discussed, and the perceived Gini is presented. The hypotheses are then tested with country-level data. Finally, the findings of the empirical analyses are provided, and then remaining issues are discussed.

The classical redistribution hypothesis

In this paper, the classical redistribution hypothesis is construed as meaning that greater economic inequality is conducive to greater redistribution. The empirical results of testing the redistribution hypothesis have presented conflicting findings, as shown in Table 1: Some studies have supported the hypothesis, whereas other studies have found no support for it (see also Kenworthy and McCall 2008; Lind 2005). This inconclusive evidence makes the heading of the 'redistribution puzzle' remain in the literature (Lind 2005, 124). Furthermore, some scholars who have not found supporting evidence for the redistribution hypothesis often refer to the so-called Robin Hood paradox to describe the fact that democracies with low levels of inequality redistribute more, while democracies with high levels of inequality redistribute less.[29]

[29] Lindert (2004, 15) defines the paradox in this way: 'History reveals a "Robin Hood Paradox," in which redistribution from rich to poor is least present when and where it seems most needed'.

Table 1. *Recent Studies Testing the Classical Redistribution Hypothesis*

Dependent variable	Independent variable	Findings	Source
absolute redistribution	market Gini[a]	positive	Alemán and Woods (2018)
	wage inequality	not significant	Finseraas (2008)
	market Gini	positive	Gründler and Köllner (2017)
	market Gini	positive	Kenworthy and Pontusson (2005)
	market Gini	positive	Mahler (2008)
	market Gini	positive	Scervini (2012)
relative redistribution	market Gini	positive	Gründler and Köllner (2017)
	wage inequality	not significant	Iversen and Soskice (2006)
	market Gini	not significant	Luebker (2014)
	wage inequality	not significant	Lupu and Pontusson (2011)
social expenditure	market Gini	positive	Barnes (2013)[c]
	Gini[b]	negative	de Mello and Tiongson (2006)
	mean-to-median income ratio	negative	Engelhardt and Wagener (2014)
	median-to-mean income ratio	not significant	Larcinese (2007)
	wage inequality	negative	Moene and Wallerstein (2001, 2003)
	mean-to-median income ratio	not significant	Rodríguiez (1999)

Notes: [a] The market Gini represents the Gini coefficient before taxes and transfers. [b] The Gini coefficient from the UNU-WIDER database was used, regardless of how the coefficient was measured. [c] This study shows that the direct measures of the median voter income have little effect on redistribution; that is, it does not support the Meltzer-Richard model in its original and strict sense, while the main finding buttresses the redistribution hypothesis.

The use of different measures of inequality and redistribution, as well as different model specifications, might have contributed to the mixed results. In Table 1, one thing to note is that the market Gini, unlike other inequality measures, consistently has a positive effect on redistribution, except in the case of Luebker (2014). It is plausible that there is a spurious correlation, rather than causality, between market inequality and redistribution. Kenworthy and Pontusson (2005, 457–8) also did not exclude the possibility that there is no direct causal connection between them. More fundamentally, it is rarely questioned whether or not there is a problem in the underlying assumption

of the redistribution hypothesis that voters are fully informed of actual inequality and correctly realise their position in the income distribution, as in the case of the Meltzer-Richard model. With this information, according to this hypothesis, voters can calculate their economic gains or losses and then have preferences for redistribution.[30]

Regarding preferences for redistribution, in previous empirical studies, there is no agreement on its role in the relation between economic inequality and redistribution. For example, Engelhardt and Wagener (2014, 3) regarded preferences for redistribution as 'mere cheap-talk' and then just examined the effect of perceived inequality on redistribution, while several studies have focussed on the extent to which actual or perceived inequality influences redistributive preferences, without considering redistribution, as shown in Table 2.

Table 2. *Studies Employing Redistributive Preferences at the Macro Level*

Dependent variable	Independent variable	Findings	Source
redistributive preferences	net Gini[a]	not significant	Lübker (2007)
	net Gini	not significant	Niehues (2014)
	Gini[b]	negative	Kelly and Enns (2010)
	perceived society type[c]	positive	Gimpelson and Treisman (2015)
	perceived society type	positive	Niehues (2014)
social expenditure	redistributive preferences	positive	Brooks and Manza (2006)
relative redistribution		positive	Luebker (2014)

Notes: [a] The net Gini indicates the Gini coefficient after taxes and transfers. [b] The original source of the Gini coefficient is not reported. [c] The perceived society type variable was produced by using an identical survey question to those in the study by Niehues (2014) (see Question C in Appendix 1) but employing a slightly different aggregation method to create the subjective country average Gini coefficient.

[30] Individuals, in fact, do not construct attitudes towards policies simply by following their economic self-interest (Fong 2001). However, there is considerable evidence that the preferences gap of redistribution between income groups is significant in European countries (Peters and Ensink 2015). Additionally, Soroka and Wlezien (2008) showed that lower-income groups' preferences for welfare spending, unlike other spending domains, are distinct from the preferences of the other income groups in the United States.

In fact, in the Meltzer-Richard model, as well as the conventional redistribution hypothesis, public opinion towards redistribution, explicitly or implicitly, plays a crucial role in determining redistribution. Meltzer and Richard (1981, 924) emphasised 'voter demand for redistribution' to account for redistribution. Kelly and Enns (2010, 859) stressed the importance of 'mass preferences' for redistribution and placed them 'at the heart of the model'. Kenworthy and McCall (2008, 36) formulated the causal chain of the redistribution hypothesis by adding inequality perceptions and redistributive preferences.[31] Additionally, Cusack, Iversen, and Rehm (2008) emphasised the connection between the demand and supply sides of redistribution.[32]

Accordingly, testing the redistribution theory essentially requires redistributive preferences as a mediator between economic inequality and redistribution; however, many researchers have tended to ignore the role of preferences for redistribution or only addressed a part of the relationships even when taking the preferences into account, as shown in Table 2. Particularly, the effect of support for redistribution on redistribution has been rarely explored in comparative studies, except in those by Brooks and Manza (2006) and Luebker (2014), who conducted multivariate regression analyses and found a significantly positive effect.[33] Additionally, Niehues (2014) simply conducted a bivariate correlation analysis that indicates no relationship between

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[31] Kenworthy and McCall (2008), however, examined just the over-time patterns of actual inequality, inequality perceptions, support for redistribution, and the generosity of redistributive programmes, respectively, in eight countries over the 1980s and 1990s. They did not conduct further statistical analysis.

[32] Nevertheless, Cusack, Iversen, and Rehm (2008) did not examine the direct relationship between the demand side and the supply side of redistribution in their empirical analysis.

[33] Kenworthy (2009), however, cast doubt on the findings of Brooks and Manza (2006) by illustrating that there is no association between social policy preferences and public social expenditures over time within countries. Additionally, the research method of Brooks and Manza (2006) and Luebker (2014) has limitations; both studies simply used pooled OLS with a small number of observations: 32 and 56, respectively.

redistributive preferences and redistribution. Lupu and Pontusson (2011) also did the same analysis but found rather strong correlation between the preferences of the middle-income group and redistribution.

Actual inequality versus perceived inequality

Recent research on perceptions of economic inequality has revealed that there is a significant gap between actual inequality and perceived inequality. Several studies based on cross-national comparisons have provided evidence for this (e.g., Bublitz 2016; Engelhardt and Wagener 2014; Gimpelson and Treisman 2015; Kuhn 2015b; Niehues 2014).[34] Even prior to these studies, some researchers had pointed out that contextual inequality, such as income inequality, does not directly translate into perceptions of inequality (see Neckerman and Torche 2007, 349–50). Beramendi and Anderson (2008, 405–8) also cast doubt on the dominant assumption that people perceive actual inequality accurately, which the conventional political economy of inequality and redistribution builds on.

Aside from the fact that voters have incomplete information on actual inequality, there are some plausible theories or models to explain the discrepancy between actual and perceived inequality. For instance, according to the theories developed in social psychology, such as the reference-group hypothesis, people tend to perceive themselves as being in the middle of the social hierarchy (Evans and Kelley 2004; Kelley and Evans 1995; Merton 1968, chaps. 9–10; Stouffer et al. 1949); moreover, the system justification theory postulates that people tend to hold favourable attitudes

[34] Additionally, there are some empirical studies exploring Americans' perceptions of inequality and its difference from actual inequality: Chambers, Swan, and Heesacker (2014), Eriksson and Simpson (2012), Norton and Ariely (2011), and Osberg and Smeeding (2006).

towards the status quo (Jost, Banaji, and Nosek 2004). In addition, Bublitz (2016) and Cruces, Perez-Truglia, and Tetaz (2013) provided empirical evidence that low-income earners overestimate their income position, while high-income earners underestimate their income position.

If people perceive the level of economic inequality differently from the actual inequality level, we cannot predict preferences for redistribution directly from the actual level of economic inequality (Gimpelson and Treisman 2015, 21). It is highly likely that voters who think the level of inequality is serious and unacceptable, irrespective of the level of actual inequality, demand more redistribution. That is, how much inequality is perceived rather than how much inequality exists is expected to determine preferences for redistribution (Eriksson and Simpson 2012, 741).

In various regression models, in fact, people's assessment of inequality is a substantive predictor for the support over redistribution (Gimpelson and Treisman 2015; Kuhn 2011, 2015a, 2015b;[35] Niehues 2014). Additionally, numerous randomised survey experiments have shown clear evidence that correcting misperceptions of income position or distribution has a significant impact on shifting opinions towards redistribution (e.g., Cruces, Perez-Truglia, and Tetaz 2013; Karadja, Möllerström, and Seim 2014; Kuziemko et al. 2015).[36] It has therefore been shown that perceived inequality plays a key role in forging redistributive preferences.[37] Consequently, actual

[35] Kuhn's work presents its evidence at the individual level.

[36] Bublitz (2016), however, provided evidence that correcting the misperceptions does not always make a significant difference in the demands for redistribution in each country sample.

[37] Regarding the determinants of individuals' preferences for redistribution, there are numerous studies (e.g., Alesina and Giuliano 2011; Alesina and La Ferrara 2005; Cusack, Iversen, and Rehm 2008; Fong 2001; Guillaud 2013; Mosimann and Pontusson 2014; Rueda 2014; see also McCarty and Pontusson 2009, 680–7, for a summary of the important literature); however, they do not directly address perceived inequality.

inequality on which the classical redistribution hypothesis is based can be replaced with perceived inequality on condition that redistributive preferences are considered in testing the redistribution theory.

The redistribution hypotheses reformulated

The main hypotheses here belong to the two different sections of the theoretical framework discussed above: One is to address the relationship between actual or perceived inequality and redistributive preferences, and the other is related to the association between redistributive preferences and redistribution. To begin with, the following two hypotheses represent two sides of the same coin. As noted above, it is assumed that actual inequality has nothing to do with redistributive preferences; on the other hand, perceived inequality is expected to have a positive impact on redistributive preferences. In other words, the more unequal people find their society regardless of the actual level of inequality, the greater redistribution they demand.

Hypothesis 1: Actual inequality will not significantly affect redistributive preferences.

Hypothesis 2: Perceived inequality will positively and significantly affect redistributive preferences.

With respect to the controls for redistributive preferences, economic development is predicted to be closely associated with the demand for redistribution. Economic development is a commonly used control, and previous research suggests that a growing economy makes people more supportive of social spending (Durr 1993).

Union density is controlled as well because union members are considerably more supportive of redistribution than those who are non-union members (Mosimann and Pontusson 2014; Rueda 2014). Ethnic fractionalisation is included as a control since there is empirical evidence that ethnic diversity negatively affects the support for redistribution (Alesina and Glaeser 2004, 133–81; Dahlberg, Edmark, and Lundqvist 2012). Additionally, a society that has a proportional representation system is expected to have more favourable public opinion towards redistribution, as is the case with redistribution, as noted below.

Hypothesis 3: Redistributive preferences will positively and significantly affect redistribution.

It is plausible to assume that mass preferences influence redistributive policy outcomes in modern democracies, following Page and Shapiro's (1983) seminal paper, which presented evidence that opinion changes lead to policy changes.[38] Soroka and Wlezien's (2010) extensive work also supported the close link between policy preferences and policy outcomes. Moreover, this hypothesis was supported by empirical studies in some countries, such as Canada, Germany, the United Kingdom, and the United States (Brooks and Manza 2006, 817–8). In fact, many studies on the redistribution theory, explicitly or implicitly, agree with this assumption; however, it has not been fully tested in a cross-national perspective.

[38] Burstein (2003) also found, by conducting a systematic review of the major literature, that the impact of public opinion on public policy is substantial: 'Three-quarters of the relationships between opinion and policy are statistically significant' (33).

Regarding the controls for redistribution, to begin with, a lagged dependent variable is used to control for a serial correlation.[39] The unemployment rate and the share of the elderly control for the need-driven redistributive effects that are considered rather automatic compensatory responses to their variations in need;[40] in this regard, they can also be termed as need variables. Next, according to the earliest proponents of the power resources theory, Korpi and Stephens, power resources that influence redistribution are mobilised at two points in the distributive process: union strength and leftist government (Bradley et al. 2003, 195). Iversen and Soskice (2006) also stressed that union density and leftist government are decisive predictors for redistribution. As with the negative association between ethnic diversity and redistributive preferences, several studies have shown evidence that ethnic fractionalisation has a negative impact on redistribution (e.g., Alesina et al. 2003; La Porta et al. 1999). An electoral system of proportional representation tends to induce greater redistribution than other electoral systems (Cusack, Iversen, and Rehm 2008; Iversen and Soskice 2006; Persson, Roland, and Tabellini 2007). Economic development is expected to increase redistribution according to Wagner's law, which predicts that economic progress results in a rise of public expenditure (Esping-Anderson and Myles 2009, 643). Economic growth is also

[39] Whether to include a lagged dependent variable was examined by using the Wooldridge test for autocorrelation in panel data (*xtserial* command in Stata). As a result, the redistribution equation requires a lagged dependent variable because there is a significant serial correlation in the residuals from the model estimated without the lagged dependent variable, while the redistributive preferences equation does not require the variable.

[40] Several studies have classified redistribution into two types according to different paths: One is driven by policy changes (policy-driven redistribution), and the other is the outcome of automatic responses produced by the variations of the number of people in need in an existing welfare system (need-driven redistribution) (see Huber and Stephens 2014, 260–1; Kenworthy and Pontusson 2005, 456).

hypothesised to boost redistribution by providing the capacity to spend more on redistributive policies (Morgan and Kelly 2013).[41]

Measurement and data

Perceived inequality measures

Several ways to measure inequality perceptions have been developed so far, but there is no consensus on how to operationalise and measure perceived inequality. Schalembier (2015) identified three different measures of perceived income inequality at the country level. The first indicator is based on respondents' answers to the question of whether income differences are too large (see Question B in Appendix 1; Table 3). The second measure developed by Engelhardt and Wagener (2014) is the perceived mean-to-median ratios divided by the actual mean-to-median ratios for each country, which is called weighted perceived inequality. The third method invented by Niehues (2014) uses the question of choosing one of the five diagrams showing different types of society, in which seven bars in different sizes are stacked (see Question C in Appendix 1). The size of each bar is weighted and aggregated, and a new bar for each class is constructed. A Gini coefficient is then calculated from the size of each bar and their assigned values.

The measures listed above, however, have their own weaknesses. The first measure is too crude because respondents can only express how seriously they feel about income differences. This measure is closer to an indicator of critical assessment of income

[41] When redistribution is measured as a relative indicator to GDP, GDP growth that is, in fact, the change in GDP needs to be included in the equation as a control variable (Peters and Ensink 2015, 586).

differences rather than that of perceived inequality. Also, this measure is highly correlated with the variable of redistributive preferences ($r = .84$). The other two measures share the same limitations in that both survey questions used in constructing each measure are based on the categories of people ranked in the social hierarchy; in fact, they ask about social stratification rather than income inequality (see Questions A and C in Appendix 1). Social stratification cannot be reduced to a single dimension of income inequality because its main forms are class structure and social status (Goldthorpe 2010); accordingly, these measures should be interpreted with caution since they reflect more than economic inequality.

Table 3. *Perceived Inequality Measures at the Country Level*

Variable	Definition	Source
perceived Gini	The Gini coefficient based on the distribution of perceived social position on a scale of 1 (bottom) to 10 (top); see Question A in Appendix 1.	ISSP[a] 1987, 1992, 1999, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, and 2014
perceived income differences	The percentage of respondents who agree strongly or agree with the statement that differences in income are too large; see Question B in Appendix 1.	ISSP 1987, 1992, 1999, and 2009
perceived society type	The average of the Gini coefficients based on diagrams of society, weighted by the proportion of respondents who chose the diagram; see Question C in Appendix 1.	ISSP 1992, 1999, and 2009
perceived mean-to-median ratio	The mean-to-median ratio based on the distribution of perceived social position on a scale of 1 (bottom) to 10 (top); see Question A in Appendix 1.	ISSP 1987, 1992, 1999, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, and 2014

Note: [a] The International Social Survey Programme.

More specifically, the measure of weighted perceived inequality employed by Engelhardt and Wagener (2014) and Schalembier (2015) indicates the degree of under- or overestimation of the actual inequality rather than perceived inequality itself. Thus, it is appropriate to employ the perceived mean-to-median ratios, not the weighted

perceived inequality, as a measure of perceived inequality on condition that we know exact mean and median values. In the frequency distribution of the discrete variable based on the integer scale of 1 to 10 (see Question A in Appendix 1; Table 3), however, only a value of the median class can be estimated; that is, this value does not sharply divide the higher half of a population from the lower half.[42] Consequently, the ratio of mean-to-median becomes a very blunt measure that does not properly reflect the whole structure of inequality in a country.[43]

As for the third measure, there are three more issues questioning the average Gini coefficient produced. First, the different size of each bar in a diagram was designed to simply describe a whole picture of perceived type of society, and thus the relative size of each bar itself is not supposed to be very meaningful. Second, the assigned values for each class on an ordinal scale from 1 to 7 in Niehues' (2014) method are based on an *ad hoc* decision. Last, the diagrams D and E (see notes in Appendix 1) clearly illustrate different types of society, but there is little difference between them in terms of the Gini coefficient. On the other hand, Gimpelson and Treisman (2015) employed a slightly different aggregation method from Niehues' (2014) approach to produce the average perceived Gini coefficients,[44] which is rather simple to calculate and was thus used in this study for comparison with other measures, as shown in Table 3.

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[42] For instance, in the ISSP 2014 data (the United States), 37.81% of the respondents put themselves on the scale of 6, which is the value of the median class calculated from the density distribution.

[43] It is evidenced in Appendix 3 that the correlation between the perceived Gini and perceived mean-to-median ratio is negative ($r = -.27$), which indicates the problematic bias in the ratio measure.

[44] Unlike Niehues' (2014) method based on generating a new bar for each class at the aggregate level, Gimpelson and Treisman (2015) translated each type of society into the Gini coefficient and then calculated average values according to the frequency distribution.

To remedy the shortcomings of the existing measures discussed above, a new measure of perceived inequality, the perceived Gini, was developed for this inquiry. This measure is innovative because it uses the underlying structure of the frequency distribution based on the respondents' perceived social position in a country, which has never been fully employed in previous studies.[45] This approach is basically the same as computing the Gini coefficient using an actual income distribution, but the perceived Gini and market (or net) Gini are not directly comparable since they have different metrics. The crucial difference is that the perceived Gini is based on the relative assessment of a respondent's social position (see Question A in Appendix 1), whereas income surveys on which the actual Gini indices are based ask respondents to report their actual incomes, regardless of their relative income levels.

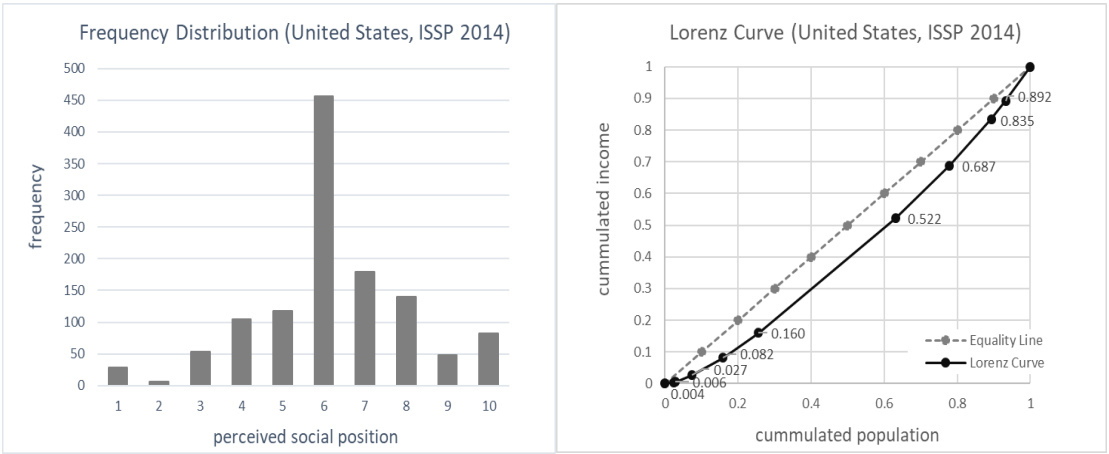

Figure 1. Frequency distribution of perceived social position and Lorenz curve.

The perceived Gini was computed as follows: First, the area under the Lorenz curve (A) is calculated by using the properties of a trapezoid from the distribution of

[45] To my knowledge, Gründler and Köllner (2017) also constructed the Gini coefficient of perceived inequality in the same way, but they only used 4 waves of the ISSP data (1987, 1992, 1999, and 2009). This study fully exploited 16 rounds of the ISSP to construct the measure, however.

perceived social position discussed above; second, the area under the Lorenz curve is subtracted from the area under the line of perfect equality $(0.5 - A)$; third, the ratio of the area between the line of perfect equality and the Lorenz curve to the area under the line of perfect equality is taken $((0.5 - \mathrm{A})/0.5 = 1 - 2\mathrm{A})$; and fourth, the perceived Gini employed here is found by multiplying 100 $((1 - 2\mathrm{A}) \times 100)$. For example, in Figure 1, the area (A) is 0.419; the perceived Gini of the United States in 2014 is thus 16.2.

To summarise, the perceived Gini is the most suitable measure for perceived inequality at the country level amongst existing measures in Table 3, although the social hierarchy, which the survey question asks about, implies more than income inequality. This measure has 181 three-year-average observations for OECD countries (292 country-year observations for OECD countries and 387 observations for all countries). The observations of the perceived Gini in OECD countries are illustrated in Appendix 4. In most OECD countries, the trend of the perceived Gini is considerably different from that of the market Gini.

Additionally, Figure 2 lists the countries according to the level of the perceived or market Gini,[46] using its mean value in each country. Nordic countries show a lower level of perceived inequality, whereas Post-communist countries show a higher level of perceived inequality. The perceived Gini of South Korea is considerably higher than that of Iceland, but the two countries are highly and similarly equal countries in terms of the market Gini. Portugal is a highly unequal country in terms of both the perceived

[46] There is a large discrepancy between the means of the market Gini and the perceived Gini: $46.09 - 17.27 = 28.82$. This is mainly due to the different metrics when measuring them. Thus, it is not meaningful to directly compare the level of the perceived Gini with that of the market Gini.

Gini and the market Gini, but in most countries, the relative level of the perceived Gini does not correspond to that of the market Gini.

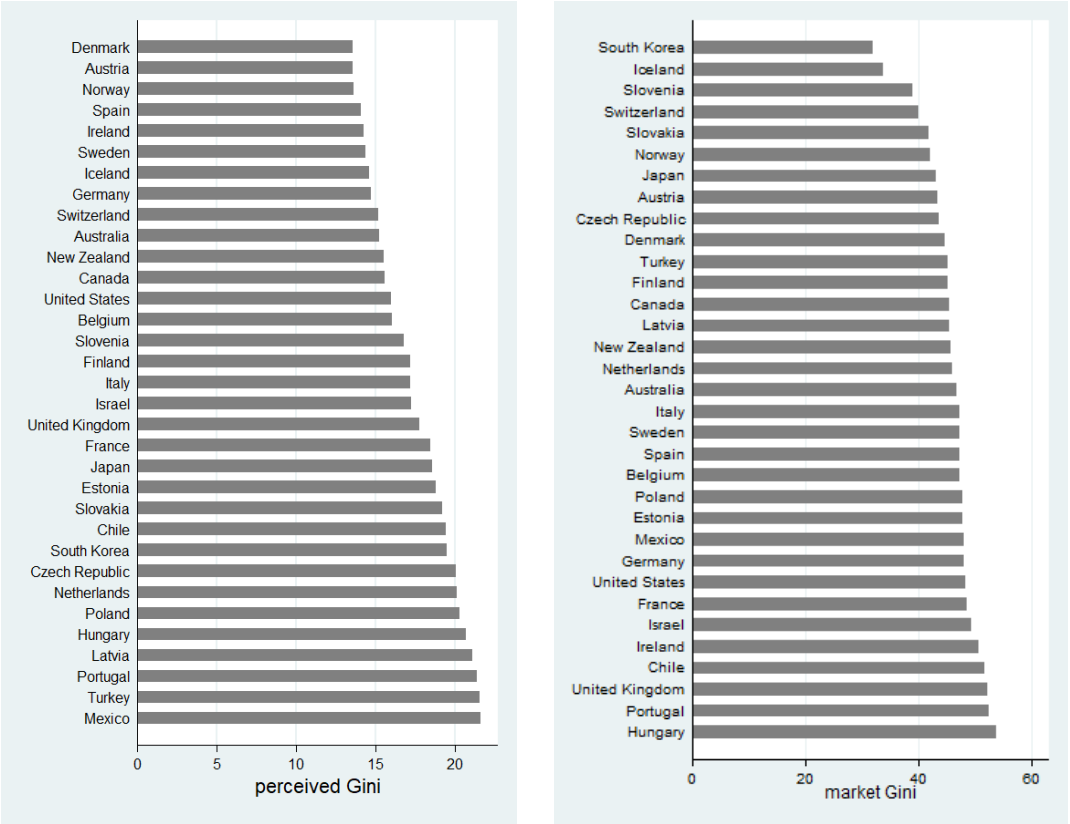

Figure 2. Perceived Gini and market Gini in 33 OECD countries. Note: The graphs used data, averaged by country, based on the ISSP 1987 to 2014 and the SWIID over the period 1985–2015 (see Appendix 2).

With respect to the perceived inequality data, all the measures of inequality perceptions at the country level were constructed from the International Social Survey Programme (ISSP) 1987 to 2014 for 33 OECD countries.[47] In constructing the measures, weighting factors provided by the ISSP were used to diminish possible

[47] Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States (Greece and Luxembourg are not included amongst 35 OECD countries as of 2018).

biases due to the sampling method in each country.[48] There are four different measures shown in Table 3. First, both the perceived mean-to-median ratios and the perceived Gini were computed by using the frequency distribution of self-positioning on a bottom-to-top scale (1 to 10); the data were collected from ISSP 1987, 1992, 1999, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, and 2014 (ISSP Research Group 2016). Second, the average scores of the perceived fairness in income differences were calculated; the data were obtained from ISSP 1987, 1992, 1999, and 2009 (ISSP Research Group 2016). Third, the perceived society type was calculated by averaging the subjective Gini coefficients of each diagram, following Gimpelson and Treisman's (2015) method; the data were taken from ISSP 1992, 1999, and 2009 (ISSP Research Group 2016).

Redistributive preferences, redistribution, and actual inequality measures

Redistributive preferences are defined as the degree of respondents' agreement to the question of the government's responsibility for reducing income differences, which is the most widely used measure of redistributive preferences in empirical studies.[49] This question is found in the following surveys: ISSP 1985–2010 and the Comparative Study of Electoral Systems (CSES) Module 4 (see Questions D in Appendix 1);[50] their

[48] Each country-year ISSP survey has its own weighting procedure, and this procedure is documented. In many cases, weighting factors are based on age, gender, education, and region.

[49] Alternatively, Tóth and Keller (2011) developed a composite index, the Redistributive Preference Index (RPI), which is based on five categorical variables about fair redistribution, job provision, free education, social spending, and a government's responsibility in the 2009 special Eurobarometer survey on poverty and social exclusion. However, this measure captures too broad a notion of redistributive preferences, and its coverage is relatively limited. Consequently, this index was not employed for the current study.

[50] A similar question is also found in the European Social Survey (ESS), but the data were not used in the current analyses because its coverage is restricted to European countries.

country-year observations cover 34 OECD countries over the period from 1985 to 2015.[51] One thing to note is that each country's fieldwork dates for a given ISSP or CSES module are not always the same as the specific calendar year of the module, and the coding of the country-years in the current dataset was thus conducted following the actual fieldwork dates for each country.

To construct a country-level measure of redistributive preferences, in each country-year, the number of respondents who strongly agreed or agreed with the statement of the above question was divided by the total number of respondents. This ratio indicates the level of preferences for redistribution in a country-year. This measure was also built by using weighting factors to mitigate sampling biases, as in forming the perceived inequality measures. The data came from ISSP 1985, 1987, 1990, 1992, 1993, 1996, 1999, 2000, 2006, 2009, 2010, and the CSES Module 4 (ISSP Research Group 2016; CSES 2016).

Regarding the measures of redistribution, there are two widely used approaches in the literature: One is to use absolute or relative redistribution based on the gap between the Gini coefficient of market income (pre-taxes and transfers) and the Gini coefficient of disposable or net income (post-taxes and transfers);[52] the other is to measure social spending as a share of GDP. The two approaches have their own pros and cons. For

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[51] Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States (Luxembourg is not included amongst 35 OECD countries as of 2018).

[52] When it comes to choosing either absolute redistribution or relative redistribution in examining the redistribution theory, opinion is divided. For example, Luebker (2014) claimed that the Meltzer-Richard model implies relative redistribution, while Kenworthy and Pontusson (2005) adopted an absolutist approach by arguing that an absolute measure can remove level effects and that it is easier to interpret.

instance, the former cannot capture the effect of in-kind redistribution (or publicly provided services),[53] and thus the overall redistributive effect tends to be underestimated. On the other hand, social spending encompasses both in-cash and in-kind public expenditures, while the redistributive effect of spending varies according to its internal progressiveness, and the effect of taxes is not considered (Mahler 2008, 163). Thus, the above redistribution measures were alternatively employed for this inquiry; the data were taken from the Standardized World Income Inequality Database (SWIID) and the OECD Social Expenditure Database (SOCX) (Solt 2016; OECD 2016).[54]

Additionally, Figure 3 lists the countries according to the levels of redistributive preferences and absolute redistribution, using their mean values in each country. Anglo-Saxon countries show a lower level of redistributive preferences, and Nordic and Western European countries show a higher level of absolute redistribution. The levels of absolute redistribution in Turkey, South Korea, and Chile are significantly lower than other countries; however, their levels of redistributive preferences rank amongst the highest preferences group. Overall, there is a mismatch between the level of redistributive preferences and the level of redistribution.

With respect to the actual inequality measure, the Gini coefficient of market income was used in the main analyses, which is rather standard practice in studies on the redistribution theory; Finseraas (2009, 101) also pointed out that the Meltzer-

[53] See Esping-Anderson and Myles (2009, 648–52) for more details about the issues of measuring redistribution.

[54] As for social spending, public social expenditure as a percentage of GDP was employed. This spending includes both cash benefits and benefits in kind, and the main social policy areas considered are as follows: old age, survivors, incapacity-related benefits, health, family, active labour market programmes, unemployment, housing, and other social policy areas.

Richard model refers to market income inequality. The Gini coefficient of market income came from the SWIID.[55] Wage inequality and other actual inequality measures, such as those in Table 1, were not considered. Wages are only a part of market income, and wage distribution is thus different from market income distribution by which a more comprehensive level of inequality can be calculated; ratio inequality measures also have limitations to reflect the overall level of inequality in the population.

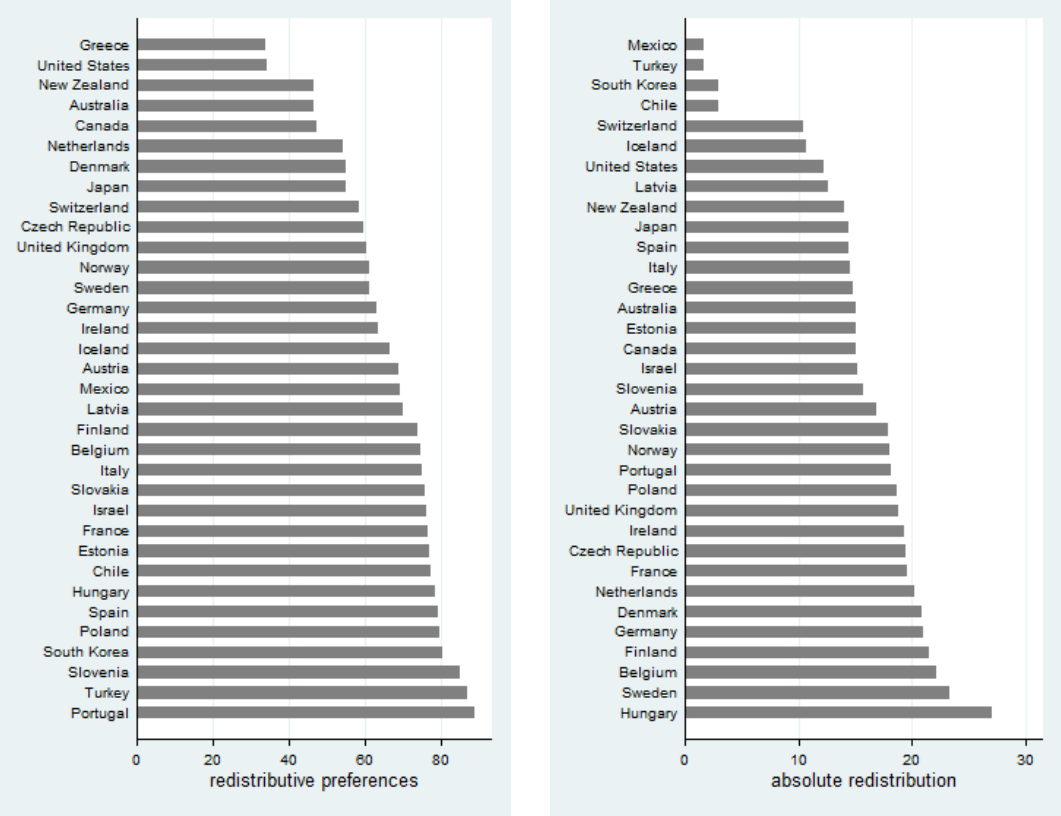


Figure 3. Redistributive preferences and absolute redistribution in 34 OECD countries. Note: The graphs used data, averaged by country, based on the ISSP 1985 to 2010, the CSES Module 4, and the SWIID over the period 1985–2015 (see Appendix 2).

[55] Jenkins (2015) assesses two secondary income inequality data—the World Income Inequality Database (WIID) and the SWIID—and recommends the WIID over the SWIID; however, the use of the SWIID is appropriate for the present study since it provides the measures of absolute and relative redistribution as well.

Control variables

As for the political control variables, first, left cabinet can be measured as a categorical variable with five levels: 1) hegemony of right-wing parties; 2) dominance of right-wing parties; 3) balance of power between left and right; 4) dominance of social democratic and other left parties; and 5) hegemony of social democratic and other left parties. In the present model, however, the cumulative variables of the above annual measures of left power over the current and previous five years were employed to explore their historical effects;[56] the original source is the Comparative Political Data Set 1960–2013 (Armingeon et al. 2015). Second, electoral system is a dichotomous variable with a code of 1 assigned to a proportional representation (PR) system and a code of 0 assigned to the other electoral systems. The data were collected from the Table of Electoral Systems Worldwide by the International Institute for Democracy and Electoral Assistance (International IDEA).

Regarding the socio-demographic control variables, unemployment rate can be measured as a percentage of the total labour force, and elderly population represents a share of the population that is aged 65 or older; these two controls were produced from the data taken from the World Development Indicators (World Bank 2016), and the missing values of the unemployment rate were linearly interpolated. Union density is an indicator of union membership as a percentage of total wage and salary earners; the data came from Visser (2015), and missing values were also linearly interpolated. Ethnic diversity can be quantified by ethnic fractionalisation, which measures the probability that two randomly selected individuals from a population belong to

[56] Morgan and Kelly (2013, 677) regarded the use of cumulative measures as standard practice, but there is no clear consensus on the length of the entire period. For this study, a five-year time span was opted for, considering electoral cycles with which the level of redistribution is likely to change.

different groups; its maximum value of 1 means that each person belongs to a different group, whereas the minimum value of 0 means that each person belongs to the same group; the data were collected from Alesina et al. (2003).

Last, economic development can be expressed as the logarithm of real GDP per capita based on prices that are constant across countries and over time, and economic growth can be represented by the yearly percentage growth rate of real GDP at constant national prices. These two economic controls were generated by using the GDP data taken from the Penn World Table (Feenstra, Inklaar, and Timmer 2015).

Analysis and findings

Model specification and estimation

To evaluate the predictions of the hypotheses, the system of two equations is specified and estimated below: One is the redistributive preferences equation that explains the impact of actual or perceived inequality on redistributive preferences, and the other is the redistribution equation that accounts for the effect of redistributive preferences on redistribution. Redistributive preferences and redistribution are the dependent variables in this system. The interdependence between the two equations exists in that the dependent variable of the first equation, redistributive preferences, is an independent variable of the second equation. This equation system is deemed recursive under the assumption of unidirectional dependency. In the right-hand side of the redistribution equation, except the lagged dependent variable, the only variable lagged by one period is redistributive preferences because current period's policy preferences are expected to influence policy outcomes for next period (Soroka and Wlezien 2010, 38).

In this set of equations, one period indicates three years, and the main analyses used three-year-average data, first, to eliminate short-term fluctuations of the covariates and second, to capture the mid-term effects of the determinants, considering that the levels of inequality and redistribution are rather persistent over time.[57] For each country *i* and time period *t*, each equation is then written as a function of explanatory factors and a set of control factors:

$$\begin{aligned} redistributive\ preferences_{it} = {} & \beta_0 + \beta_1 perceived\ Gini_{it}\ (or\ market\ Gini_{it}) \\ & + \beta_2 economic\ development_{it} + \beta_3 union\ density_{it} \\ & + \beta_4 ethnic\ fractionalisation_i + \beta_5 proportional\ representation_i \\ & + \delta_t + \varepsilon_{it} \end{aligned} \quad (1)$$

$$\begin{aligned} redistribution_{it} = {} & \beta_0 + \beta_1 redistributive\ preferences_{it-1} + \beta_2 redistribution_{it-1} \\ & + \beta_3 economic\ development_{it} + \beta_4 economic\ growth_{it} \\ & + \beta_5 unemployment_{it} + \beta_6 elderly\ population_{it} \\ & + \beta_7 union\ density_{it} + \beta_8 left\ cabinet_{it} \\ & + \beta_9 ethnic\ fractionalisation_i + \beta_{10} proportional\ representation_i \\ & + \delta_t + \varepsilon_{it} \end{aligned} \quad (2)$$

In each equation, β_0 is the constant term, δ_t represents time fixed effects, and ε_{it} is the idiosyncratic error term. Time dummies are included to eliminate time-related impulses from the errors. This strategy makes the assumption more likely to hold—that errors are not correlated across countries.

[57] Yearly data were also used in a robustness check, which supported the main findings of the current study; the results are not reported here, however.

Before moving on to estimation techniques, the issue of endogeneity should be discussed. In the redistributive preferences equation, the perceived Gini is likely to be endogenous to redistributive preferences. It is plausible that those who demand more redistribution may rank their social position lower, thus increasing the perceived Gini. To mitigate the issue of simultaneous causality, many researchers tend to use temporally lagged explanatory variables; however, the recent literature strongly claims that this practice is illusory (Bellemare et al. 2017; Reed 2015). Reed (2015) recommends the use of lagged endogenous variables as instruments over the doubtful practice. With respect to the relationship between the market Gini and redistributive preferences, causality might also run in both ways, albeit not simultaneously. It certainly takes time for policy preferences to translate into policy outcomes, such as actual inequality. In this case, an instrumental variables regression can also be used as a more conservative way of estimation.

In the redistribution equation, it is also reasonable to expect the endogenous relation between redistributive preferences and redistribution.[58] The causal effect of redistributive preferences operates with a one period lag, as discussed earlier, whereas reverse causality is contemporaneous because people can immediately adjust their preferences by comparing policy outcomes with their preferred outcomes (Soroka and Wlezien 2010, 38). In this case, the use of a lagged explanatory variable can be sufficiently justified (Bellemare et al. 2017, 34), although this practice does not fully address the endogeneity issue.

[58] The direction of causality between policy preferences and policy outcomes, in fact, has long been a subject of debate in the literature (see Steele 2015, 450 for a summary of the discussions). Unlike Soroka and Wlezien (2010), Brooks and Manza (2006) claim that there is no immediate policy feedback from welfare output to policy preferences; however, they acknowledge that a long-term policy feedback effect might exist.

Regarding estimation techniques, an instrumental variables approach is mainly used to deal with endogeneity. Analyses can be conducted not only for a set of equations but also for each equation to fully exploit the instrumental variables approach. First, for estimating Equation (1), there are two workable methods: one is to use two-stage least squares (2SLS) with a lagged endogenous variable as an instrument, following Reed's (2015) recommendation; the other is to conduct an instrumental variables regression for a static panel data model (*xtivreg* command in Stata), using the same instrument. A second-lag of an endogenous variable is employed as an instrument for two reasons: First, a first lag is highly likely to be correlated with the errors; and second, the use of deeper lags significantly reduces the sample size, thereby making an analysis not feasible.

Second, to estimate Equation (2), a system GMM estimator for a dynamic panel data model, which is increasingly popular to control endogeneity, is used. This estimator was proposed by Arellano and Bover (1995) and fully developed by Blundell and Bond (1998). They assume that good instruments are not available outside the immediate dataset, and thus a lagged dependent variable and any other endogenous variables are instrumented with internal instruments. Roodman (2009a) provides a pedagogic introduction to this estimator and *xtabond2* command in Stata. When using this estimator, both one-step and two-step estimations can be conducted, but Windmeijer (2005) found that the two-step estimation is more efficient than the one-step estimation although its standard errors tend to be downward biased. Meanwhile, he devised a correction for the two-step standard errors, thus making the two-step estimation with the corrected errors superior to the one-step estimation (Roodman 2009a, 97). Accordingly, the current analysis uses two-step system GMM with Windmeijer-corrected standard errors. Moreover, we use small-sample adjustments;

the forward orthogonal-deviations transform instead of first differencing is employed to maximise sample size; and collapsed second-lag instruments are used to limit instrument proliferation that cause bias (Roodman 2009b). Additionally, ordinary least squares (OLS) is used as a less conservative strategy. The Huber-White sandwich estimator that adjusts for clustering over countries is employed with the OLS to address heteroscedasticity that causes standard errors to be biased.

Third, for the estimation of the system of equations, two different estimators can be employed. One is to use 2SLS, one of the most widely used estimators for an instrumental variables regression. In this estimation, each endogenous variable is instrumented with all the exogenous variables; redistribution, a first-lag of redistributive preferences, and a first-lag of the perceived or market Gini are considered endogenous variables in the system. As in estimating Equation (1), a third-lag of the perceived or market Gini is employed as an instrument. An alternative method to 2SLS is to use a conditional mixed-process (*cmp*) estimator developed by Roodman (2011). This estimator fits a recursive model without a latent endogenous variable and allows mixing of all the model types in a multi-equation system. Furthermore, *cmp* is appropriate for situations in which 'there is simultaneity but instruments allow the construction of a recursive set of equations' (Roodman 2011, 161). In this estimation, the same instrument for a first-lag of the perceived or market Gini as in 2SLS is used.

Empirical results

Before estimating the empirical models, graphical evidence and the correlation matrix in Appendix 3 help understand the relationships between the main variables. Graph (a) in Figure 4 shows a very weak correlation between the market Gini and the perceived

Gini; however, the correlation is not statistically significant at the 5% level ($r = 0.14$). This implies that there is a significant gap between market inequality and perceived inequality in developed countries. Graphs (b) and (c) in Figure 4 clearly illustrate that the bivariate correlation between the perceived Gini and redistributive preferences is significant ($r = 0.40$),[59] but the market Gini has no relationship with the preferences ($r = 0.03$). Graph (d) in Figure 4 shows that redistributive preferences are not significantly associated with absolute redistribution ($r = -0.02$). Appendix 4, which presents a time plot for each OECD country, also presents information confirming that, in most countries, there is no over-time association between redistributive preferences and absolute redistribution. Similarly, relative redistribution and social expenditure have no significant relationships with redistributive preferences ($r = -0.05$ and 0.10, respectively).

Table 4 reports the results of the baseline and full models of the redistributive preferences equation, using random effects IV estimations and 2SLS estimations.[60] The evidence consistently supports *Hypotheses 1* and *2*. That is, perceived inequality, not market inequality, is significantly and positively associated with redistributive

[59] The finding of a strong positive association between the perceived Gin and redistributive preferences might be largely driven by the cross-country association. One way to check this is to draw a plot of country means for the two variables ($r = 0.46$). The between-country variation is considerable, as predicted, but this does not necessarily mean that the within-country variation is negligible. In individual countries, observations are not enough to conduct a fixed effects or time-series regression (in the simplest fixed effects model, for instance, the average number of observations per country is merely 2.4); however, we can look at over-time developments in each country instead. Appendix 4 shows a time plot for each OECD country that has more than one observation for each variable; in many countries, we can observe a positive over-time association between the perceived Gini and redistributive preferences. Accordingly, there is no reason to ignore the within-country variation.

[60] Observations within countries are not enough to conduct a fixed effects IV estimation. In the simplest fixed effects model, the average number of observations per country is only 2.4, for example.

preferences. That is, people prefer more redistribution when perceived inequality increases in OECD countries.

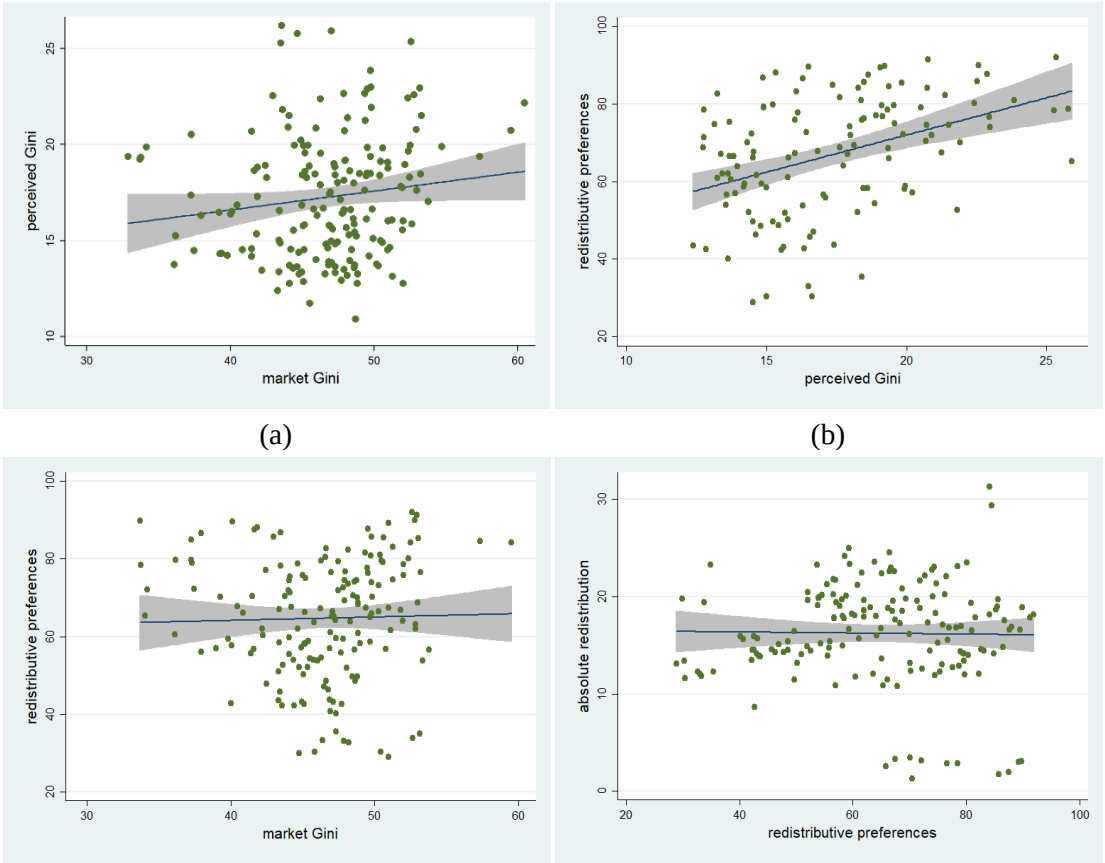


Figure 4. The relationship between perceived and market inequality, redistributive preferences, and redistribution. Notes: The graphs used data based on the ISSP 1987 to 2014 and the SWIID over the period 1985–2015 (see Appendix 2). The shaded area around the regression line shows the 95% confidence interval.

Turning to the control factors in Table 4, ethnic diversity has a negative effect on redistributive preferences, while a proportional representation system is positively related with redistributive preferences, as predicted. Economic development shows a negative relationship with redistributive preferences, except for Column (1), which is rather contrary to the expectation that a growing economy leads people to be in favour of social spending (Durr 1993). Regarding the strength of the instruments, Table 4 also

reports the F-statistic against the null hypothesis that the instruments are irrelevant in the first-stage regression. In Columns (4), (5), and (6), the F-statistic is greater than 10, which indicates the absence of weak instruments.[61]

Table 4. *Determinants of Redistributive Preferences*

	redistributive preferences					
	(1) IV (re)	(2) IV (re)	(3) IV (re)	(4) 2SLS	(5) 2SLS	(6) 2SLS
	Panel A: baseline models					
perceived Gini	2.767		2.461	2.478		2.526
	(0.835)***		(0.807)***	(0.708)***		(0.717)***
				[26.18]		[22.34]
market Gini		0.331	-0.323		-0.043	-0.410
		(0.628)	(0.582)		(0.295)	(0.421)
					[127.91]	[56.39]
R-squared	0.227	0.049	0.256	0.237	0.101	0.256
observations	68	146	67	68	146	67
countries	28	34	28			
	Panel B: full models					
perceived Gini	2.766		2.617	2.599		2.617
	(0.986)***		(1.286)**	(0.914)***		(0.929)***
				[19.09]		[16.99]
market Gini		0.268	-0.205		0.056	-0.205
		(0.561)	(0.599)		(0.261)	(0.394)
					[90.06]	[36.71]
economic development	1.058	-8.531	-1.607	-1.202	-10.428	-1.607
	(5.036)	(4.180)**	(8.719)	(5.335)	(2.884)***	(5.432)
union density	-0.101	-0.076	-0.056	-0.064	-0.106	-0.056
	(0.090)	(0.066)	(0.108)	(0.120)	(0.068)	(0.123)
ethnic fractionalization	-0.194	-0.105	-0.232	-0.237	-0.152	-0.232
	(0.098)**	(0.094)	(0.124)*	(0.092)**	(0.059)**	(0.094)**
proportional representation	12.692	11.178	11.944	12.359	13.775	11.944
	(4.479)***	(4.924)**	(5.080)**	(3.527)***	(2.455)***	(3.667)***
R-squared	0.434	0.344	0.445	0.448	0.357	0.443
observations	65	144	65	65	144	65
countries	27	34	27			

Notes: Columns (1), (2), and (3) report random effects IV estimations with robust standard errors clustered by country in parentheses, and Columns (4), (5), and (6) report 2SLS estimations with standard errors in parentheses. All regressions include period fixed effects. All the first stages, period fixed effects, and constant terms are not reported. A second-lag of an endogenous variable is used as an instrument for the variable in each regression. In the 2SLS estimations, the F-statistic associated with the first-stage effect of the instrument on the endogenous variable is reported in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.

[61] Staiger and Stock (1997) suggested that there is a weak instruments problem if the first-stage F-statistic is less than 10.

Table 5. *Determinants of Redistribution (Baseline Models)*

	absolute redistribution		relative redistribution		social expenditure	
	(1) GMM (sys)	(2) OLS	(3) GMM (sys)	(4) OLS	(5) GMM (sys)	(6) OLS
redistributive preferences (t-1)	0.043	0.002	0.041	0.005	0.091	0.027
	(0.037)	(0.004)	(0.035)	(0.008)	(0.067)	(0.020)
dependent variable (t-1)	1.163	1.005	1.022	0.987	0.838	0.885
	(0.096)***	(0.013)***	(0.080)***	(0.009)***	(0.106)***	(0.078)***
economic development	1.273	0.216	2.099	0.658	4.801	0.547
	(1.549)	(0.189)	(2.552)	(0.432)	(3.722)	(0.530)
AR (1) p-val	0.150		0.341		0.441	
AR (2) p-val	0.204		0.092		0.302	
Hansen p-val	0.236		0.172		0.023	
Diff-Hansen p-val	0.268		0.215		0.205	
instruments	17		17		17	
R-squared		0.983		0.989		0.893
observations	144	144	144	144	141	136
countries	33	33	33	33	33	32

Notes: Columns (1), (3), and (5) report two-step system GMM estimations with Windmeijer-corrected standard errors in parentheses, and Columns (2), (4), and (6) report OLS estimations with robust standard errors clustered by country in parentheses. All regressions include period fixed effects. All period fixed effects and constant terms are not reported. AR (1) p-val and AR (2) p-val report the p-values of the Arellano-Bond test for autocorrelation. Hansen p-val reports the p-value of the test of overidentifying restrictions. Diff-Hansen p-val reports the p-value of the test of exogeneity of instrument subsets (GMM instruments for levels). The number of instruments is reported. The instrument matrix is restricted to the first- and second-lags and collapsed to prevent instrument proliferation. * significant at 10%; ** significant at 5%; *** significant at 1%.

Tables 5 and 6 present the results for the redistribution equation with absolute redistribution, relative redistribution, and social expenditure as dependent variables. The impact of redistributive preferences on each dependent variable was examined by using two-step system GMM and OLS estimators. Most importantly, there is no significant relationship between redistributive preferences and redistribution, regardless of a different type of redistribution and estimation techniques, in both baseline and full models. These results strongly suggest that there is little support for *Hypothesis 3*, as opposed to the findings of Brooks and Manza (2006) and Luebker (2014) (see Table 2). Regarding the controls for redistribution, economic development has a positive effect on redistribution, as expected, albeit not consistently significant.

Contrary to the prediction, economic growth negatively affects redistribution, which is rather robust to the different measures of redistribution.

Table 6. *Determinants of Redistribution (Full Models)*

	absolute redistribution		relative redistribution		social expenditure	
	(1) GMM (sys)	(2) OLS	(3) GMM (sys)	(4) OLS	(5) GMM (sys)	(6) OLS
redistributive preferences (t-1)	-0.014	0.008	0.000	0.018	0.022	0.032
	(0.024)	(0.007)	(0.034)	(0.012)	(0.035)	(0.019)
dependent variable (t-1)	1.023	0.987	0.946	0.967	0.813	0.738
	(0.116)***	(0.028)***	(0.071)***	(0.019)***	(0.102)***	(0.111)***
economic development	0.180	0.311	0.661	0.922	0.476	0.095
	(0.280)	(0.152)*	(0.662)	(0.325)***	(0.548)	(0.479)
economic growth	-0.088	-0.071	-0.045	-0.072	-0.141	-0.276
	(0.039)**	(0.024)***	(0.060)	(0.034)**	(0.105)	(0.136)*
unemployment	0.027	0.013	0.017	0.008	0.039	0.031
	(0.052)	(0.021)	(0.040)	(0.029)	(0.044)	(0.039)
elderly population	0.014	-0.031	-0.015	-0.070	0.062	0.077
	(0.035)	(0.031)	(0.081)	(0.050)	(0.146)	(0.092)
union density	-0.002	0.001	0.007	0.003	0.011	0.023
	(0.009)	(0.005)	(0.014)	(0.007)	(0.014)	(0.017)
left cabinet	0.013	0.008	0.011	0.020	0.011	-0.028
	(0.014)	(0.012)	(0.023)	(0.017)	(0.035)	(0.022)
ethnic fractionalisation	0.001	-0.001	-0.007	-0.005	-0.008	-0.013
	(0.013)	(0.003)	(0.012)	(0.005)	(0.010)	(0.010)
proportional representation	0.175	-0.177	-0.043	-0.388	-0.183	0.240
	(0.422)	(0.178)	(0.695)	(0.282)	(0.828)	(0.462)
AR (1) p-val	0.270		0.600		0.872	
AR (2) p-val	0.353		0.142		0.283	
Hansen p-val	0.134		0.269		0.334	
Diff-Hansen p-val	0.346		0.471		0.684	
instruments	26		26		26	
R-squared		0.975		0.981		0.904
observations	130	130	130	130	126	123
countries	28	28	28	28	28	27

Notes: Columns (1), (3), and (5) report two-step system GMM estimations with Windmeijer-corrected standard errors in parentheses, and Columns (2), (4), and (6) report OLS estimations with robust standard errors clustered by country in parentheses. All regressions include period fixed effects. All period fixed effects and constant terms are not reported. AR (1) p-val and AR (2) p-val report the p-values of the Arellano-Bond test for autocorrelation. Hansen p-val reports the p-value of the test of overidentifying restrictions. Diff-Hansen p-val reports the p-value of the test of exogeneity of instrument subsets (GMM instruments for levels). The number of instruments is reported. The instrument matrix is restricted to the second-lag and collapsed to prevent instrument proliferation. * significant at 10%; ** significant at 5%; *** significant at 1%.

The test statistics for the two-step system GMM estimations given in the lower part of Tables 5 and 6 assess the validity of the results. Arellano-Bond tests fail to find autocorrelation in the AR (1) and AR (2) residuals. The Hansen J statistic that tests the null hypothesis of the exogeneity of the instruments as a group indicates that its p-value is significantly different from 0 in each regression. The Difference-in-Hansen tests of the validity of the additional orthogonality conditions of system GMM also have p-values different from 0. Additionally, the number of instruments is kept within less than the number of groups, which is a suggested rule of thumb.

Table 7 provides the results of the estimations for a set of equations with absolute redistribution. The results for a system of equations with relative redistribution and social expenditure are presented in Appendices 5 and 6. As predicted by *Hypotheses 1, 2,* and *3* and evidenced by the current analyses for each equation, all the models consistently show that perceived inequality, not actual inequality, is significantly associated with redistributive preferences,[62] while redistributive preferences do not have a significant effect on the different measures of redistribution.

Regarding the control variables in Table 7 and Appendices 5 and 6, economic development negatively affects redistributive preferences, but its effect is rather positive on redistribution. The effect of economic growth on redistribution is consistently negative. Ethnic fractionalisation has a negative effect on redistributive preferences, but this effect is negligible on redistribution. A proportional representation system significantly affects the preferences, while it does not influence redistribution. The unemployment rate and the share of the elderly, which control for the need-driven

[62] Considering that conventional standard errors are usually less than robust standard errors, we need to be cautious about emphasising the significance of the market Gini in Column (2) of Table 7 and Appendices 5 and 6.

Table 7. *Determinants of Redistributive Preferences and Absolute Redistribution*

	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) *cmp*	(5) *cmp*	(6) *cmp*
	Panel A: redistributive preferences					
perceived Gini	2.856		2.194	1.351		1.382
	(0.843)***		(0.903)**	(0.753)*		(0.752)*
	[12.02]		[13.87]	[129.87]		[129.87]
market Gini		0.730	0.509		0.085	-0.102
		(0.315)**	(0.567)		(0.471)	(0.418)
		[65.87]	[27.69]		[1831.43]	[1831.43]
economic development	-1.433	-9.522	-2.718	-5.650	-9.423	-5.854
	(5.680)	(2.998)***	(5.562)	(5.961)	(6.439)	(6.019)
union density	-0.027	-0.094	-0.068	-0.047	-0.072	-0.052
	(0.128)	(0.068)	(0.128)	(0.101)	(0.098)	(0.098)
ethnic fractionalization	-0.173	-0.108	-0.161	-0.200	-0.163	-0.202
	(0.108)	(0.060)*	(0.108)	(0.089)**	(0.087)**	(0.087)**
proportional representation	13.375	17.784	16.026	12.669	13.397	12.882
	(4.091)***	(2.612)***	(4.813)***	(4.363)***	(4.776)***	(4.021)***
R-squared	0.506	0.455	0.534	0.490	0.357	0.490
observations	46	114	46	119	162	119
	Panel B: absolute redistribution					
redistributive preferences (t-1)	-0.054	-0.001	-0.041	0.001	0.016	0.006
	(0.042)	(0.027)	(0.035)	(0.012)	(0.012)	(0.013)
dependent variable (t-1)	1.063	1.017	1.049	0.988	0.971	0.970
	(0.063)***	(0.258)***	(0.054)***	(0.027)***	(0.021)***	(0.022)***
economic development	-0.635	0.210	-0.525	0.202	0.402	0.240
	(0.650)	(0.288)	(0.573)	(0.192)	(0.073)***	(0.187)
economic growth	-0.165	-0.099	-0.162	-0.064	-0.068	-0.062
	(0.125)	(0.036)***	(0.113)	(0.027)**	(0.021)***	(0.025)**
unemployment	0.049	0.014	0.040	0.015	-0.004	-0.000
	(0.055)	(0.027)	(0.048)	(0.024)	(0.019)	(0.021)
elderly population	0.077	-0.034	0.057	-0.015	-0.044	-0.026
	(0.096)	(0.048)	(0.084)	(0.034)	(0.028)	(0.035)
union density	-0.013	-0.003	-0.010	-0.001	0.002	-0.000
	(0.016)	(0.007)	(0.014)	(0.005)	(0.005)	(0.005)
left cabinet	0.008	0.002	0.004	0.006	0.007	0.005
	(0.031)	(0.014)	(0.028)	(0.012)	(0.012)	(0.011)
ethnic fractionalisation	0.002	-0.001	0.002	-0.003	-0.001	-0.004
	(0.011)	(0.005)	(0.010)	(0.003)	(0.003)	(0.003)
proportional representation	0.668	0.034	0.459	-0.085	-0.218	-0.086
	(0.785)	(0.433)	(0.670)	(0.203)	(0.180)	(0.178)
R-squared	0.971	0.976	0.977	0.975	0.975	0.975
observations	46	114	46	130	130	130

Notes: Columns (1), (2), and (3) report 2SLS estimations with standard errors in parentheses, and Columns (4), (5), and (6) report *cmp* estimations with robust standard errors clustered by country in parentheses. All regressions include period fixed effects. All the first stages, period fixed effects, and constant terms are not reported. A second-lag of an endogenous variable in Panel A is used as an instrument for the variable in each regression for a system of two equations. The F-statistic associated with the first-stage effect of the instrument on the endogenous variable is reported in brackets. In the *cmp* estimations, R-squared and observations are the results of the first-stage. * significant at 10%; ** significant at 5%; *** significant at 1%.

redistribution, as well as union strength and leftist government, which come from the power resources theory, do not have significant impacts on redistribution. As for the validity of the instruments, like in Table 4, the F-statistic is reported in each regression; all the values are greater than 10.

In sum, the results demonstrate that perceived inequality rather than actual inequality is significantly associated with preferences for redistribution, while these preferences do not directly translate into redistribution. The findings are robust to whether to estimate a single equation or a system of equations as well as the use of different measures of redistribution and different estimation techniques.

Discussion and conclusion

Many previous studies trying to explain the size of redistribution, such as that of Meltzer and Richard (1981), are based on the premise that policy preferences determined by economic situations lead to policy outcomes, which is within a rational choice paradigm that expects people to make choices in their best self-interest. This study challenges this underlying assumption by providing evidence that perceived inequality, not actual inequality, matters substantially in redistributive preferences and that preferences for redistribution do not significantly affect redistribution. This evidence implies that perceptions that do not simply mirror reality are in a close relationship with preferences that do not directly shape reality, which shares a lot in common with the conventional criticism of the rational choice theory or neoclassical economics.

The evidence provided by the randomised survey experiments (e.g., Cruces, Perez-Truglia, and Tetaz 2013; Karadja, Möllerström, and Seim 2014), as discussed, points

to the importance of information and the gap between objective social position and subjective social position when it comes to shaping preferences for redistribution. This study also provides evidence that misperceptions of social position lead to the significant difference between market inequality and perceived inequality. However, this fact does not necessarily mean that the effect of political information on policy preferences is always apparent; we cannot exclude the possibility that, regardless of political information, as Bartels' (2005) study shows, policy preferences are disconnected from material self-interest.[63] Thus, although it is evident that the overall association between perceived inequality and redistributive preferences is significant and that correct political information reduces the gap between actual and perceived inequality, it should be noted that there are 'real and profound limits of political information as a transforming force when it comes to public opinion about complex policy issues' (Bartels 2005, 25).

Quite legitimately, one can invite an essential question about the possibility of the cross-national comparison of the policy inputs-outputs link. In fact, a large body of literature on policy responsiveness focused on the United States (e.g., Erikson, MacKuen, and Stimson 2002), but a number of studies also provided evidence for the opinion-policy nexus within Canada, Germany, and the United Kingdom (see Brooks and Manza 2006, 818). This fact suggests the operation of policy responses to policy demands across countries beyond the United States, and Brooks and Manza (2006) found that policy preferences exert a significant influence over welfare spending amongst OECD countries. Also, Soroka and Wlezien (2010) presented the evidence of policy responsiveness in the United States, Canada, and the United Kingdom.

[63] There is abundant empirical evidence that attitudes or behaviours are inconsistent with material self-interest in behavioural economics.

Furthermore, Baumgartner et al. (2009) observed, in terms of translating voter demands into policies, more similarities than differences between the United States, Belgium, and Denmark. Accordingly, we can make some generalisable predictions for policy responsiveness, although its magnitude and nature might be different across countries.

The Meltzer-Richard hypothesis does not assert that a majority rule based on direct democracy dictates policy outcomes, as conjectured by Milanovic (2000). Meltzer and Richard (1981, 924) explicitly assumed that voters choose candidates who favour more redistribution or less redistribution, not direct voting for policies. The point is therefore not whether the redistribution hypothesis is consistent with decision-making mechanisms in representative democracy, but to which extent voters' preferences are equally represented in a democratic political system. However, the current finding that policy preferences do not directly determine policy outcomes raises a fundamental question about the effectiveness of representative democracy because there is a common belief that a good democracy is a polity in which voters' preferences are fully represented (see also Dahl 1971, 1).

The finding that there is no congruence between changes in preferences and changes in redistributive policies in developed democracies presents many challenges to take up in future work. To give a few of them, first, we cannot exclude the possibility of measurement errors in measuring preferences for redistribution; second, there might be no causal link between redistributive preferences and redistributive policies, which needs further theoretical explanation;[64] third, it is worth examining whether there is

[64] According to Page and Shapiro (1983, 189), this finding might be one of the cases in which policy outcomes are not responsive to the public, demonstrating that democratic responsiveness does not always pervade politics.

unequal responsiveness to the preferences across different income groups,[65] which also tests the fundamental assumption of individual's equal political influence in the conventional redistribution theory; finally, we can assume multi-stages and linkages between policy preferences and policy outcomes, as Powell (2005) suggested, which may make empirical research much more puzzling.

In future research, the analysis of the historical evidence based on the case studies of redistributive policies may also shed light on the role of public opinion or the way in which public opinion influences policy outcomes in substantive terms. For instance, researchers could investigate whether or not key changes in redistributive institutions or policies that are distinguishable from need-driven automatic variations of redistribution are preceded and driven by changes in redistributive preferences. If this is the case, which contradicts the results of the present statistical analysis, it would be necessary to search for an alternative analytical model. Otherwise, we can more convincingly dismiss the standard model of redistribution built on redistributive preferences as an intervening factor. In this respect, the conclusion of this research is rather tentative—that the rational choice theory for redistribution is not supported.

One of the important tasks in conducting this comparative analysis was to develop a measure of perceived inequality. As discussed, there is no consensus on the conceptualisation, operationalisation, or measurement of perceived inequality. The fact that perceived inequality can be understood at both the individual and country levels—unlike market inequality, which is only a country-level indicator—makes the situation

[65] Regarding this policy representation, there have been conflicting findings: For instance, Bartels (2008) and Gilens (2012) provided evidence supporting unequal responsiveness, while Soroka and Wlezien (2010) presented evidence that policy representation as well as public responsiveness is similar across a set of groups—income, education, and party.

more complicated. Some measures, such as perceived society type in Table 3, try to average individuals' evaluations of inequality to produce a macro-level measure; however, there is no convincing theoretical justification for this type of averaging. A more promising strategy is to develop independent measures at each level. The perceived Gini based on the frequency distribution of self-positioning on a bottom-to-top scale is exemplary as a country-level indicator. Measures for individuals' inequality perceptions need to be separately developed; for example, Kuhn (2011) attempted to construct subjective inequality measures based on individuals' estimates of real and just wages by using the ISSP data. Additionally, what is worthy of further exploration is to identify major factors in shaping people's views about inequality at the different levels.

Furthermore, the analysis of perceived inequality and redistributive preferences at the individual level constitutes an obvious next step and would complement the macro-comparative analysis of the type presented here. Most existing models or theories of redistribution take it for granted that individual preferences for redistribution are derived from pure economic self-interest or current income. It is therefore necessary to explore whether or not material wealth is the only decisive factor for individuals' preference formation. If it also turns out not to be the case, the classical redistribution theory would become more untenable from an empirical standpoint at both the macro and micro levels.

Supplementary materials

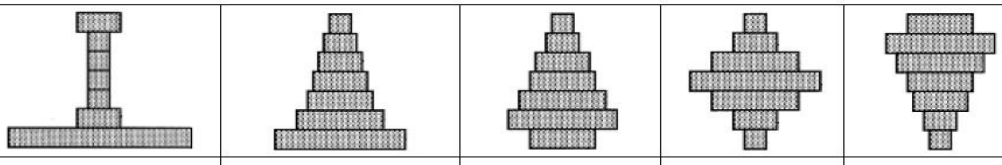
Supplementary materials are available at http://doi.org/10.3886/E101245V2.

Appendix 1. Survey questions

Variable	Question	Source
perceived Gini / perceived mean-to-median ratio	A. In our society there are groups which tend to be towards the top and groups which tend to be towards the bottom. Below is a scale that runs from top to bottom. Where would you put yourself now on this scale? (10 the top, 9, 8, 7, 6, 5, 4, 3, 2, 1 the bottom)	ISSP 1987, 1992, 1999, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, and 2014
perceived income differences	B. To what extent do you agree or disagree with the following statements? Differences in income in <R's country> are too large. (1 Strongly agree, 2 Agree, 3 Neither agree nor disagree, 4 Disagree, 5 Strongly disagree)	ISSP 1987, 1992, 1999, and 2009
perceived society type	C. These five diagrams show different types of society. Please read the descriptions and look at the diagrams and decide which you think best describes <R's country>. What type of society is <R's country> today—which diagram comes closest? (1 Type A, 2 Type B, 3 Type C, 4 Type D, 5 Type E)[a]	ISSP 1992, 1999, and 2009
redistributive preferences	D. To what extent do you agree or disagree with the following statements? It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes. (1 Strongly agree, 2 Agree, 3 Neither agree nor disagree, 4 Disagree, 5 Strongly disagree)	ISSP 1985, 1987, 1990, 1992, 1993, 1996, 1999, 2000, 2006[b], 2009, and 2010 / CSES Module 4 (2011–2015)[c]

Notes: [a] See the figure below. [b] ISSP 2006 does not have the item of '3 Neither agree nor disagree' amongst the five items. [c] The data from the CSES Module 4 were incorporated into the variable of redistributive preferences to maximise the number of observations available in the main analyses.

Q14. These five diagrams show different types of society. Please read the descriptions and look at the diagrams and decide which you think best describes <country> ..



Type A	Type B	Type C	Type D	Type E
A small elite at the top, very few people in the middle and the great mass of people at the bottom.	A society like a pyramid with a small elite at the top, more people in the middle, and most at the bottom.	A pyramid except that just a few people are at the bottom.	A society with most people in the middle.	Many people near the top, and only a few near the bottom.

Source: ISSP 2009 Social Inequality IV Final questionnaire (August 2008)

Appendix 2. Descriptive statistics

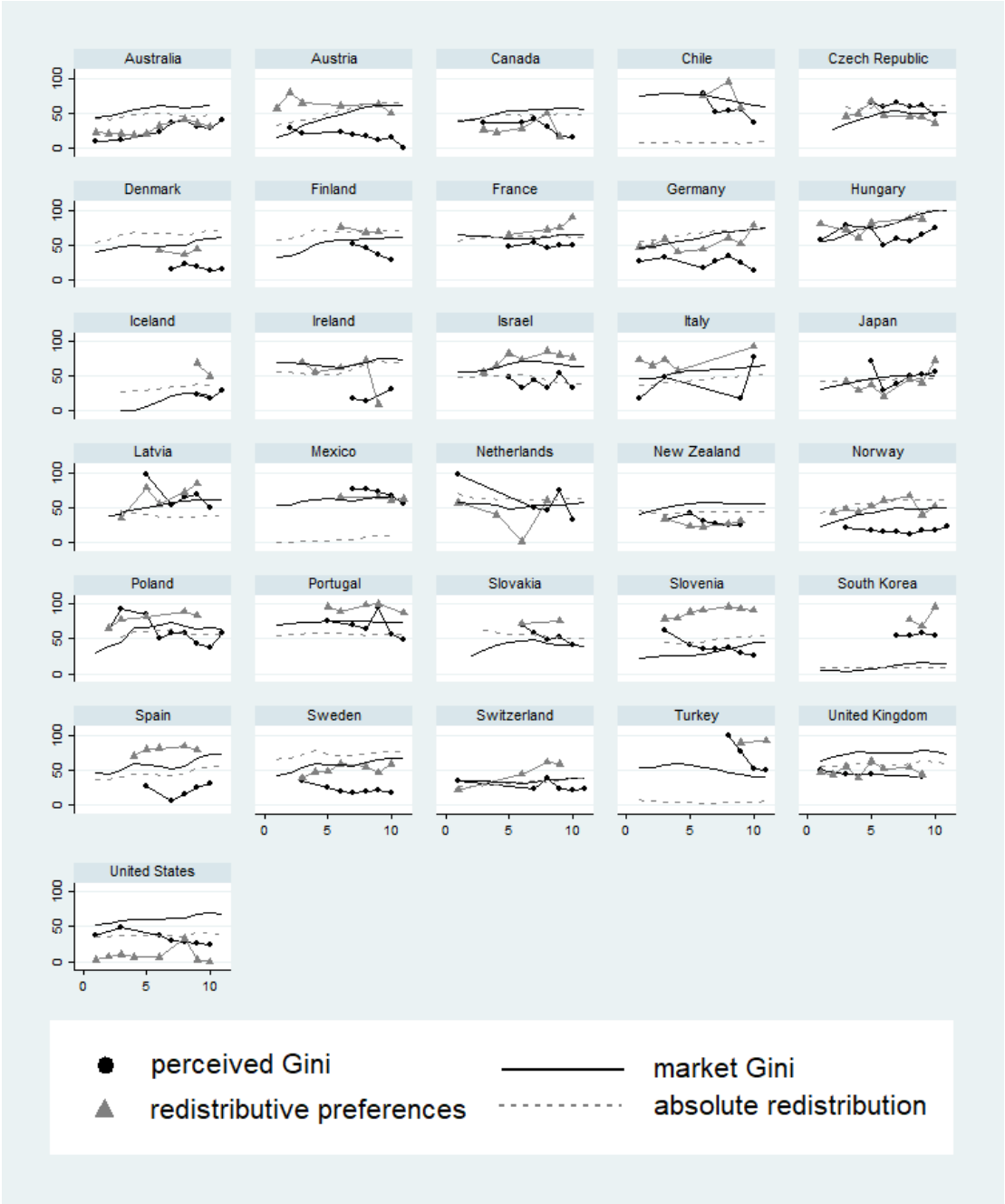
variable	observations	mean	std. dev.	min	max
perceived Gini	181	17.27	3.16	10.91	26.18
perceived income differences	72	81.24	10.99	58.04	97.06
perceived society type	55	31.65	3.62	24.21	38.44
perceived mean-to-median ratio	181	0.98	0.05	0.85	1.10
market Gini	364	46.09	5.20	29.11	60.63
net Gini	364	30.57	6.41	18.72	50.90
redistributive preferences	165	64.70	15.28	28.92	91.91
absolute redistribution	354	15.49	6.22	0.26	31.90
relative redistribution	354	33.19	12.50	0.43	52.66
social expenditure	309	19.15	6.67	0.00	33.33
unemployment	322	7.80	4.08	0.60	25.97
elderly population	374	13.87	3.87	3.98	26.34
union density	325	34.67	22.13	6.50	97.80
left cabinet	279	12.04	6.36	1.00	25.00
economic development	335	10.10	0.48	8.55	11.07
economic growth	330	2.52	2.96	-20.05	10.48
ethnic fractionalisation	374	24.17	19.31	0.20	71.24
proportional representation	374	0.68	0.47	0.00	1.00

Appendix 3. Correlation matrix

	perceived Gini	perceived income differences	perceived society type	perceived mean-to-median ratio	market Gini	net Gini	redistributive preferences	absolute redistribution	relative redistribution	social expenditure
perceived Gini	1									
perceived income differences	**0.47**	1								
perceived society type	**0.79**	**0.69**	1							
perceived mean-to-median ratio	**-0.27**	-0.03	0.13	1						
market Gini	0.14	0.10	0.31	0.10	1					
net Gini	**0.33**	0.17	0.31	-0.10	**0.45**	1				
redistributive preferences	**0.40**	**0.84**	**0.53**	0.06	0.03	0.03	1			
absolute redistribution	**-0.21**	-0.07	-0.05	0.18	**0.38**	**-0.67**	-0.02	1		
relative redistribution	**-0.29**	-0.13	-0.17	0.18	**0.16**	**-0.81**	-0.05	**0.96**	1	
social expenditure	**-0.32**	0.01	-0.20	0.18	**0.24**	**-0.56**	0.10	**0.81**	**0.81**	1

Note: Coefficients printed in bold are significant ($p < .01$).

Appendix 4. Inequality, redistributive preferences, and redistribution



Notes: Min-max normalisation was used to bring the measures of perceived and market Gini, redistributive preferences, and absolute redistribution into the same unit for a relative comparison over time within each country. 31 OECD countries that have more than one observation for each variable were plotted. Period 1 corresponds to the three years from 1985 to 1987, and period 11 corresponds to the year 2015.

Appendix 5. Determinants of redistributive preferences and relative redistribution

	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) *cmp*	(5) *cmp*	(6) *cmp*
	Panel A: redistributive preferences					
perceived Gini	2.709		2.216	1.323		1.344
	(0.834)***		(0.905)**	(0.853)		(0.893)
	[12.43]		[14.15]	[129.87]		[129.87]
market Gini		0.733	0.441		-0.089	-0.102
		(0.318)**	(0.578)		(0.084)	(0.413)
		[55.47]	[21.34]		[1831.43]	[1831.43]
economic development	-1.913	-9.518	-2.763	-5.637	-9.032	-5.957
	(5.639)	(2.999)***	(5.561)	(6.420)	(6.410)	(6.585)
union density	-0.036	-0.094	-0.067	-0.050	-0.088	-0.053
	(0.127)	(0.068)	(0.128)	(0.101)	(0.082)	(0.099)
ethnic fractionalization	-0.176	-0.108	-0.164	-0.202	-0.167	-0.201
	(0.107)	(0.060)*	(0.108)	(0.089)**	(0.089)*	(0.089)**
proportional representation	13.512	17.793	15.731	12.762	13.310	12.996
	(4.065)***	(2.616)***	(4.841)***	(4.367)***	(4.630)***	(3.978)***
R-squared	0.512	0.455	0.534	0.490	0.357	0.490
observations	46	114	46	119	162	119
	Panel B: relative redistribution					
redistributive preferences (t-1)	-0.054	0.021	-0.052	0.012	0.394	0.018
	(0.053)	(0.038)	(0.053)	(0.030)	(0.263)	(0.031)
dependent variable (t-1)	1.010	0.991	1.009	0.966	0.970	0.961
	(0.052)***	(0.021)***	(0.051)***	(0.017)***	(0.015)***	(0.015)***
economic development	-0.622	0.905	-0.608	0.825	4.363	0.869
	(0.827)	(0.415)**	(0.818)	(0.472)*	(1.590)***	(0.495)*
economic growth	-0.156	-0.109	-0.156	-0.065	-0.130	-0.066
	(0.171)	(0.055)**	(0.170)	(0.045)	(0.047)***	(0.045)
unemployment	0.049	-0.002	0.047	0.009	0.003	-0.001
	(0.080)	(0.042)	(0.079)	(0.032)	(0.034)	(0.033)
elderly population	0.087	-0.089	0.085	-0.056	-0.088	-0.063
	(0.127)	(0.070)	(0.126)	(0.063)	(0.052)*	(0.065)
union density	-0.012	-0.002	-0.012	0.002	0.036	0.002
	(0.022)	(0.010)	(0.022)	(0.007)	(0.042)	(0.007)
left cabinet	-0.002	-0.000	-0.003	0.018	0.011	0.018
	(0.041)	(0.021)	(0.041)	(0.017)	(0.015)	(0.016)
ethnic fractionalisation	0.000	-0.003	0.000	-0.007	0.057	-0.007
	(0.015)	(0.007)	(0.014)	(0.006)	(0.042)	(0.006)
proportional representation	0.492	-0.323	0.467	-0.306	-5.486	-0.332
	(0.873)	(0.580)	(0.862)	(0.436)	(4.546)	(0.427)
R-squared	0.982	0.983	0.982	0.981	0.981	0.981
observations	46	114	46	130	130	130

Notes: Columns (1), (2), and (3) report 2SLS estimations with standard errors in parentheses, and Columns (4), (5), and (6) report *cmp* estimations with robust standard errors clustered by country in parentheses. All regressions include period fixed effects. All the first stages, period fixed effects, and constant terms are not reported. A second-lag of an endogenous variable in Panel A is used as an instrument for the variable in each regression for a system of two equations. The F-statistic associated with the first-stage effect of the instrument on the endogenous variable is reported in brackets. In the *cmp* estimations, R-squared and observations are the results of the first-stage. * significant at 10%; ** significant at 5%; *** significant at 1%.

Appendix 6. Determinants of redistributive preferences and social expenditure

	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) *cmp*	(5) *cmp*	(6) *cmp*
	Panel A: redistributive preferences					
perceived Gini	2.678		2.237	1.232		1.319
	(0.983)***		(1.138)*	(0.613)**		(0.595)**
	[11.67]		[13.18]	[129.87]		[129.87]
market Gini		0.615	0.205		0.113	-0.161
		(0.327)*	(0.667)		(0.092)	(0.346)
		[50.90]	[17.68]		[1831.43]	[1831.43]
economic development	-0.075	-10.607	-0.665	-3.404	-9.065	-3.344
	(5.997)	(3.554)***	(5.995)	(5.914)	(6.215)	(5.807)
union density	-0.070	-0.118	-0.110	-0.086	-0.086	-0.092
	(0.163)	(0.072)	(0.168)	(0.102)	(0.077)	(0.100)
ethnic fractionalization	-0.238	-0.082	-0.238	-0.212	-0.167	-0.214
	(0.128)*	(0.069)	(0.131)*	(0.086)**	(0.086)*	(0.084)**
proportional representation	12.343	18.981	13.899	12.617	13.649	12.794
	(4.533)***	(2.757)***	(5.991)**	(4.308)***	(4.726)***	(4.117)***
R-squared	0.513	0.471	0.530	0.490	0.357	0.490
observations	43	106	43	119	162	119
	Panel B: social expenditure					
redistributive preferences (t-1)	-0.005	0.137	0.006	0.097	-0.639	0.093
	(0.027)	(0.106)	(0.027)	(0.059)	(0.428)	(0.057)
dependent variable (t-1)	0.893	0.744	0.881	0.772	0.760	0.783
	(0.056)***	(0.057)***	(0.056)***	(0.074)***	(0.093)***	(0.069)***
economic development	0.025	1.299	0.137	0.746	-5.879	0.699
	(0.558)	(1.293)	(0.560)	(0.732)	(4.313)	(0.744)
economic growth	-0.417	-0.425	-0.410	-0.323	-0.142	-0.330
	(0.109)***	(0.142)***	(0.110)***	(0.120)***	(0.104)	(0.120)***
unemployment	0.001	-0.056	-0.005	0.085	0.087	0.101
	(0.042)	(0.108)	(0.043)	(0.041)**	(0.066)	(0.047)**
elderly population	-0.029	-0.131	-0.044	0.087	0.092	0.094
	(0.082)	(0.264)	(0.083)	(0.070)	(0.092)	(0.069)
union density	0.005	0.039	0.009	0.015	-0.040	0.015
	(0.013)	(0.017)**	(0.013)	(0.018)	(0.074)	(0.017)
left cabinet	-0.020	-0.046	-0.023	-0.019	-0.012	-0.019
	(0.024)	(0.044)	(0.024)	(0.015)	(0.019)	(0.014)
ethnic fractionalisation	-0.014	-0.006	-0.013	-0.009	-0.133	-0.010
	(0.011)	(0.014)	(0.011)	(0.015)	(0.087)	(0.014)
proportional representation	-0.073	-1.495	-0.237	-0.957	8.967	-1.059
	(0.480)	(1.656)	(0.479)	(1.034)	(7.481)	(1.100)
R-squared	0.979	0.862	0.978	0.904	0.904	0.904
observations	43	106	43	123	123	123

Notes: Columns (1), (2), and (3) report 2SLS estimations with standard errors in parentheses, and Columns (4), (5), and (6) report *cmp* estimations with robust standard errors clustered by country in parentheses. All regressions include period fixed effects. All the first stages, period fixed effects, and constant terms are not reported. A second-lag of an endogenous variable in Panel A is used as an instrument for the variable in each regression for a system of two equations. The F-statistic associated with the first-stage effect of the instrument on the endogenous variable is reported in brackets. In the *cmp* estimations, R-squared and observations are the results of the first-stage. * significant at 10%; ** significant at 5%; *** significant at 1%.

CHAPTER 3

Individuals' Social Position, Inequality Perceptions, and Redistributive Preferences

Abstract

The standard model of redistribution posits that attitudes towards redistribution are driven by pure economic self-interest. From a social-psychological perspective, however, subjective social status, apart from objective social status, is closely associated with policy preferences. This inquiry compares these two different approaches and further explores the role of individuals' inequality perceptions, including personal norms of inequality to which researchers have paid little attention, in shaping individual preferences for redistribution. For the empirical analysis, the new measures of perceived actual inequality, personal norms of inequality, and perceived injustice were developed with the aim to overcome the limitations of the existing measures of perceived inequality. The International Social Survey Programme (ISSP) micro-data were used to create the measures, which cover 31 OECD countries over the four waves: 1987, 1992, 1999, and 2009. The current findings show that the effect of subjective social position is stronger than that of objective income position in determining redistributive preferences. The results also demonstrate that individuals' inequality norms play a more crucial role in preference formation than does their perceptions of actual inequality, which sheds new light on another facet of inequality perceptions at the individual level.

Keywords: redistributive preferences; perceived actual inequality; personal norms of inequality; perceived injustice; perceived social position; perceived Gini

Introduction

Is pure economic self-interest the only decisive factor that drives individual preferences for redistribution? What if this self-interest is only one of the driving factors—not the most significant one—that shape preferences for redistribution? The empirical answer to these questions has important theoretical implications. According to the basic assumption of the standard model of redistribution, which is a generalised term of the Meltzer-Richard model, objective income position dictates demand for redistribution (Meltzer and Richard 1981, 924). If this is not the case, however, the cornerstone of the Meltzer-Richard model would be undermined.

The standard redistribution model assumes a close association between actual economic inequality and redistribution through the demand for redistribution at the macro level. However, much of the empirical literature analysing the relationship between inequality and redistribution ignores preferences for redistribution or even identify these preferences with redistribution. If we focus on preferences for redistribution rather than redistribution, leaving aside whether or not collective redistributive preferences translate into redistribution, it is possible to analyse, at least, the mechanism or assumption of the Meltzer-Richard model at the individual level. Of course, there are numerous studies examining the determinants of redistributive preferences at the micro level; however, their findings show that income position is just one of the significant predictors. This evidence does not say anything about the validity of the dominance of income position in preference formation.

On the other hand, many cross-national survey analyses have shown that there exist widespread misperceptions of income position or inequality and the substantial gap

between perceived inequality and actual inequality.[66] Researchers have also demonstrated that perceived inequality rather than actual inequality plays a critical role in shaping attitudes towards redistribution (e.g., Gimpelson and Treisman 2015). This empirical evidence from the social-psychological literature gives rise to the re-examination of the classical redistribution model and its fundamental assumption by using subjective perceptions of income position and inequality.

Taken all together, the gap in the literature in terms of the driving factors of redistributive preferences can be summarised as a lack of both testing the dominance of objective income position and exploring multifaceted inequality perceptions. To fill this gap, this inquiry investigates two main points. First, we question whether or not an individual's objective social position is the most decisive predictor of preferences for redistribution, as predicted by the critical assumption of the Meltzer-Richard model; to do this, the effects of objective income position and subjective social status are directly compared. Second, the impacts of inequality perceptions, in addition to social position, on individual preferences for redistribution are investigated; to this end, new measures of inequality perceptions, named perceived actual inequality, personal norms of inequality, and perceived injustice, were developed.

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[66] In addition to several studies that have systematically tested whether the gap exists through cross-national comparisons (e.g., Bublitz 2016; Engelhardt and Wagener 2014; Gimpelson and Treisman 2015; Kuhn 2015b; Niehues 2014), there are several studies examining Americans' perceptions of inequality (Chambers, Swan, and Heesacker 2014; Eriksson and Simpson 2012; Norton and Ariely 2011; Osberg and Smeeding 2006). Even prior to these studies, there were some papers pointing out that contextual inequality, such as income inequality, does not directly translate into perceptions of inequality (see Neckerman and Torche 2007, 349–50). Beramendi and Anderson (2008, 405–8) also cast doubt on the dominant assumption that people perceive actual inequality accurately, which the conventional political economy of inequality and redistribution is based on. Furthermore, a multitude of randomised survey experiments have provided considerable evidence that correcting misperceptions of individual income position or society-level inequality has an important impact on changing attitudes towards redistribution (e.g., Cruces, Perez-Truglia, and Tetaz 2013; Karadja, Möllerström, and Seim 2014; Kuziemko et al. 2015).

The current empirical results support the following claims. First, subjective social position is more important than objective social position in determining redistributive preferences, which has to my knowledge not been examined in previous comparative studies. Second, the inequality norms that each individual holds matter significantly in preference formation, and the effect of personal norms of inequality on preferences for redistribution is stronger than that of perceived actual inequality. Third, perceived injustice that can be measured as a gap between perceived actual inequality and personal norms of inequality is also closely associated with individuals' redistributive preferences. Last, perception of inequality at the country level, rather than market inequality, plays an important role in shaping individual preferences for redistribution.

The remainder of this paper is organised as follows. The second section reviews the determinants of redistributive preferences. In the third section, social position and inequality perception hypotheses are formulated. Subsequently, the measures of individuals' inequality perceptions are explained. The next section summarises the findings of the empirical analyses based on the international survey data covering 31 OECD countries (see Appendix 3). The last section discusses the remaining issues and concludes the chapter.

Social position, perceived inequality, and redistributive preferences

Ever since we observed that people behave in ways that are contrary to their material self-interest in many contexts, behavioural economics has been challenging neoclassical economics and finding the importance of other-regarding or social preferences, such as fairness, reciprocity, and equity. This research has been advanced by experimental studies (e.g., Güth, Schmittberger, and Schwarze 1982; Roth et al.

1991), and one of the hot topics in this research is redistributive politics. For instance, there is compelling evidence that those who believe that the poor work hard and that poverty is beyond the control of the poor tend to support redistribution, but economic self-interest, such as actual income, is a poor predictor for redistributive preferences (Fong 2001; Fong, Bowles, and Gintis 2005). This strong effect of self- and exogenous-determination beliefs on support for redistribution can be understood as reflecting reciprocity (Bowles and Gintis 2000) or the principle of equity (Kluegel and Smith 1986). Nevertheless, many scholars still defend the median voter model of redistribution under the assumption that economic self-interest is a decisive driver for redistributive preferences. Without considering social preferences, however, it is difficult to explain why there is substantial support for redistribution even amongst high-income individuals in many surveys. The significance of social preferences suggests the value of a broader search for driving factors inconsistent with the standard redistribution model.

In a framework of the standard redistribution model, in fact, public opinion towards redistribution plays a decisive role in determining redistribution (e.g., Cusack, Iversen, and Rehm 2008; Meltzer and Richard 1981; Kelly and Enns 2010; Kenworthy and McCall 2008). In principle, testing the standard model requires collective redistributive preferences as an intervening factor between economic inequality and redistribution. If we take preferences into account, not only country-level analyses but also individual-level analyses can be conducted. Apart from how responsive policy outcomes are to policy preferences, how society-level inequality shapes collective preferences for redistribution can be explored in a macro analysis. On the other hand, a micro analysis can estimate the effects of both a person's social status and perceptions of inequality on individual preferences for redistribution. One caveat is that conducting this micro-

level analysis should not be confused with testing the redistribution model itself. This analysis relates exactly to examining either the foundational assumption of the redistribution model or an individual-level mechanism of the model.

Table 1. *The Relation Between Social Position and Redistributive Preferences*

Author	Data and sample	Independent variable	Effects on preferences
Alesina and Giuliano (2011)	GSS: US, 1972–2004 WVS: 20–80 countries, 4 waves	family income (min 1–max 12) income (min 1–max 3)	negative negative
Alesina and La Ferrara (2005)	GSS: US, 1978–1991	logarithm of current income	negative
Clark and D'Angelo (2013)	BHPS: UK, 1991–2008	objective social position on Hope-Goldthorpe scale	negative
Corneo and Grüner (2002)	ISSP: 12 countries, 1992	individual gross income	negative
Dallinger (2010)	ISSP: 23 countries, 1999	household income (deciles 1–10)	negative
Finseraas (2009)	ESS: 22 countries, 2002	household income (min 1–max 12)	negative
Guillaud (2013)	ISSP: 33 countries, 2006	family income (quintiles 1–5) perceived social position (lower, middle, upper)	negative in part negative[a]
Karabarbounis (2011)	WVS: 14 OECD countries, 1981–2004	household income (min 1–max 10)	negative
Mosimann and Pontusson (2014)	ESS: 19 countries, 3 waves (2008, 2010, and 2012)	relative household income (min 1–max 10)	negative
Rainer and Siedler (2008)	SOEP: Germany, 2005	logarithm of household income	negative
Steele (2015)	ISSP: 38 countries, 2009	income (mean-centred country-specific deciles)	negative

Notes: BHPS (British Household Panel Survey); ESS (European Social Survey); GSS (General Social Survey); ISSP (International Social Survey Programme); SOEP (German Socio-Economic Panel); WVS (World Values Survey). [a] The upper class are significantly less inclined to favour redistribution than the middle class, but the effect of the lower class is not significant.

Most existing survey studies show that objective income position is a significant predictor of redistributive preferences in addition to other important factors; however, no researchers have directly examined the effect size of objective social location in comparison with that of subjective social position, as can be seen in Table 1. Unlike other studies, Guillaud's (2013) analysis includes both objective and subjective social positions, but their effects are not directly comparable, as the variables were measured

using different metrics. On the other hand, Finseraas (2009, 96) stated that the finding that the demand for redistribution decreases with income is in accord with the Meltzer-Richard model. To be exact, however, this evidence demonstrates neither the validity of the basic assumption of the model nor that of the model itself; this robust finding is nothing more than that income is one of the driving factors of redistributive preferences. Furthermore, Alesina and Giuliano (2011, 105) argued that the rejections of the Meltzer-Richard model, because of scant empirical support at the country level, 'do not imply immediately that people care about something other than their current income'; however, this argument has not been fully examined in the existing literature.

On the other hand, McCarty and Pontusson (2009, 672) cast doubt on the underlying assumption of the Meltzer-Richard model that '[voters'] preferences can be inferred straightforwardly from their position in the income distribution' and claimed that this questionable assumption may contribute to the failure of the model. Brown-Iannuzzi et al.'s (2015) presented correlational and experimental evidence that subjective social status is negatively associated with support for redistribution, while objective social status, such as income and education, has no relationship with the support. Meanwhile, Bolton (1991) formalised the idea that individuals are not only concerned about absolute income they get but also about their relative income position compared to others; in this study, objective social position is an absolute measure of self-interest, while perceived social position is a relative measure of self-interest.

In fact, people do not construct attitudes towards policies simply by following their economic self-interest (Fong 2001), although it cannot be denied that the preference gap of redistribution between income groups is not negligible (e.g., Peters and Ensink 2015; Soroka and Wlezien 2008; see also studies in Table 1). It is thus reasonable to assume that other cognitive factors, such as perceived social position and inequality

perceptions, which diverge from pure economic self-interest, also play a role in preference formation.

Unlike individual social position and society-level inequality, it is challenging work to conceptualise and measure individuals' inequality perceptions. However, we may ask questions as follows: How unequal a society is perceived and how unequal a society should be. In fact, perceived inequality has mostly been construed as perceptions of actual inequality in existing studies that recently started paying attention to individuals' perceptions of inequality. Few investigators, on the other hand, have focussed on personal norms of inequality that can be defined as perceptions of how much inequality is desirable in a society. Kuhn's (2011, 2015a, 2015b) work might be an exception; however, he mainly examined the effects of perceptions of actual inequality rather than personal norms of inequality. Individuals have subjective perceptions of norms, which seem to be distinct from perceptions of reality, and the former 'can guide individuals' opinions and behaviors' (Tankard and Paluck 2016, 182). However, this presumption has not been robustly tested in previous studies.

Regarding the determinants of individual preferences for redistribution, numerous studies exist (e.g., Cusack, Iversen, and Rehm 2008; Fong 2001; Rueda 2014; see more studies in Tables 1 and 2; see also McCarty and Pontusson 2009, 680–7 for a summary of the important literature). However, much of the literature does not directly address inequality perceptions, although many studies consider psychological factors, such as experience or expectation of upward mobility (e.g., Benabou and Ok 2001; Piketty 1995).[67] Table 2 shows recent research focussing on either perceived inequality or

[67] In a broad sense, perceived upward mobility might also be a form of inequality perceptions in terms of inequality of opportunity, but the current inquiry focusses on perceived inequality of outcome, such as income or social position, rather than perceived inequality of opportunity.

actual inequality as an explanatory variable. Kuhn (2011, 2015a, 2015b) and Gimpelson and Treisman (2015) employed perceived inequality measures, and the rest of the researchers used net inequality as a contextual variable. Overall, the findings show that individual preferences for redistribution are closely related with perceived inequality, while net inequality is not consistently associated with redistributive preferences.

Table 2. *The Relation Between Inequality and Redistributive Preferences*

Author	Data and sample	Independent variable		Effects on preferences
Kuhn (2011)	ISSP: Switzerland, 1999	perceived inequality	actual inequality ethical inequality equalisation of market wages[a]	positive negative positive
Kuhn (2015a, 2015b)	ISSP: 27 countries (2015a)/23 countries (2015b), 4 waves (1987, 1992, 1999, and 2009)		inequality perception[b]	positive
Gimpelson and Treisman (2015)	ISSP: 40 countries, 2009		perceived Gini (individual) perceived Gini (country average)[c]	positive positive
Dallinger (2010)	ISSP: 23 countries, 1999	actual inequality	net inequality	positive
Finseraas (2009)	ESS: 22 countries, 2002		net inequality	positive
Jæger (2013)	ESS: 31 countries, 5 waves (2002–2010)		inequality[d]	positive[e]
Kerr (2014)	ISSP: 19 countries, 3 waves (1987, 1992, and 1999)		net inequality	positive
	WVS: 37 countries, 3 waves (1990, 1995, and 2000)		net inequality	positive
	GSS: US, 2000		net inequality	positive
Kuhn (2015b)	ISSP: 23 countries, 4 waves (1987, 1992, 1999, and 2009)		net inequality	not significant
Mosimann and Pontusson (2014)	ESS: 19 countries, 3 waves (2008–2012)		net inequality	positive
Schmidt-Catran (2016)	ESS: 27 countries, 5 waves (2002–2010)		net inequality	positive
Steele (2015)	ISSP: 38 countries, 2009		net inequality	not significant
Tóth and Keller (2011)	EB: 27 countries, 2009		net inequality	positive

Notes: EB (Eurobarometer); ESS (European Social Survey); GSS (General Social Survey); ISSP (International Social Survey Programme); WVS (World Values Survey). [a] These are individual perceptions of wage inequality measures. [b] This measure was constructed in the same manner as actual inequality in Kuhn (2011). [c] These indicators were constructed by using Question G in Appendix 1, and they are different from the perceived Gini in the current analysis. [d] Gini (WIID) not specified. [e] At the level of 27 socio-demographic groups across education, social class, and age.

There is also a measurement issue that cannot be overlooked. In Table 2, net inequality is commonly used as a contextual variable that may affect individual preferences; however, the standard redistribution model refers to market income inequality, not disposable or net income inequality (Finseraas 2009, 101; Schmidt-Catran 2016, 127). From the perspective of the standard model, net inequality after taxes and transfers cannot be an explanatory variable. Moreover, it is more problematic because the gap between market inequality and net inequality is sizable in advanced democracies. Accordingly, the effect of market inequality, instead of net inequality, was tested for the present analysis.

In sum, subjective factors in terms of social position and inequality have recently started attracting attention in the literature of individual preferences for redistribution, but their significance has not been closely analysed. Furthermore, in testing the role of income position, the theoretical implications relating to the Meltzer-Richard model are not properly addressed in the existing literature. Underdeveloped measures of inequality perceptions also hinder the empirical analysis from advancing. Perceived inequality measures in Table 2 are critically discussed in more detail below, followed by a discussion of alternative measures, after the presentation of the main hypotheses.

Social position and inequality perception hypotheses

The main hypotheses address, first, the association between individual social position and redistributive preferences and second, the relationship between individuals' inequality perceptions and redistributive preferences. It is generally expected that both individual social location and perceptions of inequality would matter in shaping

preferences for redistribution. However, this inquiry goes one step further and hypothesises the relationships, first, by differentiating objective social position from subjective social position and second, by classifying inequality perceptions into three different dimensions: perceived actual inequality, personal norms of inequality, and perceived injustice.

Social position hypothesis

Hypothesis 1: Because perception of reality matters more than reality itself in preference formation, perceived social position will better explain variations in preferences for redistribution than objective social position.

Hypothesis 1 states that subjective social status will be a better predictor of individual preferences for redistribution than objective social status. The assumption that support for redistribution may not be just a function of objective income position, as opposed to the assumption of the Meltzer-Richard model, led to this hypothesis. From a social-psychological perspective, it is plausible that those who think that their social position is located at a lower level, regardless of their actual position, are more likely to demand redistribution than people who locate their social position at a higher level. In other words, an individual's social position based on self-assessment may play a more significant role in forming redistributive preferences than the individual's actual position. Brown-Iannuzzi et al. (2015) also provided empirical evidence that subjective social status is more crucial than objective social status in terms of support for redistributive policies.

Inequality perception hypotheses

Hypothesis 2: Perceived actual inequality will positively and significantly affect individual preferences for redistribution.

Hypothesis 3: Personal norms of inequality will negatively and significantly affect individual preferences for redistribution.

Hypothesis 4: Perceived injustice will positively and significantly affect individual preferences for redistribution.

Hypothesis 2 assumes that the more unequal people find their society with respect to the actual level of inequality, the greater redistribution they demand. It is highly likely that voters who think the level of inequality is serious and unacceptable, irrespective of the level of actual inequality, desire more redistribution. That is, how much inequality is perceived rather than how much inequality exists was predicted to determine preferences for redistribution (Eriksson and Simpson 2012, 741). *Hypothesis 3* states that the higher an individual's inequality norms are, the less redistribution the individual supports. In other words, people who think that a more unequal society is desirable were expected to oppose more redistribution. *Hypothesis 4* is derived from the previous hypotheses combined. If the cognitive gap between perceived actual inequality and personal norms of inequality that an individual perceives widens, the individual may be more likely to support redistribution to reduce the perceived differential between the reality and the ideal. In fact, this measure was directly inspired by Sen's (2000, 60) argument that 'people's attitudes towards, or reactions to, actual income distributions can be significantly influenced by the correspondence—or the

lack thereof—between (1) their ideas of what is normatively tolerable, and (2) what they actually see in the society around them'. Additionally, according to Whitmeyer (2004), this indicator may be an application of Jasso's justice theory.

With respect to control variables at the individual level, age, sex, education (years in school), and union membership were used for the analyses. Age, sex, and education are expected to be associated with redistributive preferences; thus, these individual-level controls are widely present in the literature. It is also assumed that union members would considerably more supportive of redistribution than those who are non-union members (Mosimann and Pontusson 2014; Rueda 2014).

Finally, there are contextual variables: perceived inequality, market inequality, economic development, economic growth, and ethnic fractionalisation. From the distribution of perceived social position in a country, we can estimate the inequality structure as a contextual factor that may condition individuals' preferences for redistribution; it can thus be hypothesised that an individual is more likely to support redistribution in a country that has a more unequal distribution of perceived social position. Similarly, the level of market inequality is predicted to influence individuals' redistributive preferences, which might be inferred from the standard model of redistribution. Economic development and economic growth are expected to create a more favourable environment for an individual to support redistribution. Ethnic fractionalisation is also included as a control since there is empirical evidence that ethnic diversity negatively affects support for redistribution (Alesina and Glaeser 2004, 133-81; Dahlberg, Edmark, and Lundqvist 2012).

Measurement and data

Redistributive preferences

Redistributive preferences as a dependent variable are defined as the degree of respondents' agreement to the question of the government's responsibility for reducing income differences, which is the most widely used measure of redistributive preferences in empirical studies.[68] This question is found in the various international surveys, such as the International Social Survey Programme (ISSP), the Comparative Study of Electoral Systems (CSES), and the European Social Survey (ESS). There are two alternative dependent variables, however, based on the same survey question (see Question A in Appendix 1). One is a dichotomous variable in which 1 is assigned to the answers 'strongly agree' or 'agree', while 0 is assigned to the answers 'neither agree nor disagree', 'disagree', or 'strongly disagree'. The other is an ordinal variable that has five original categories from 'strongly agree' to 'strongly disagree'. The data came from ISSP 1987, 1992, 1999, and 2009 (ISSP Research Group 2016) because of data availability for the main explanatory variables.

Individuals' social position and inequality perceptions

Perceived social position is an ordinal variable based on respondents' self-positioning on a top-to-bottom (10 to 1) scale (see Question C in Appendix 1); the data were also collected from ISSP 1987, 1992, 1999, and 2009 (ISSP Research Group 2016). Objective social position is also an ordinal variable based on respondents' actual

[68] Alternatively, Tóth and Keller (2011) developed a composite index, the Redistributive Preference Index (RPI), based on five categorical variables about fair redistribution, job provision, free education, social spending, and governments' responsibility in the 2009 special Eurobarometer survey on poverty and social exclusion. However, this measure captures too broad a notion of redistributive preferences, and its coverage is relatively limited. Consequently, this index is not employed in the current study.

household income before taxes and other deductions with a scale of top-to-bottom (10 to 1); the data came from ISSP 1999, which provides harmonised income categories across countries,[69] enabling direct comparison between perceived social position and objective social position, as they have the same metric.

Table 3. *Dimensions of Inequality Perceptions*

	Perception of reality	Perception of norms	Perception of injustice
Individual level	perceived actual inequality perceived society type	personal norms of inequality	perceived injustice perceived income differences
Country level	perceived Gini		

As for inequality perceptions, diverse ways to measure the perceptions have been developed so far in the literature, but there is understandably no consensus on how to operationalise and measure them since perceptions of inequality might be understood in various ways. We can conceive a variety of methods to estimate the way in which individuals perceive inequality in their society. It is thus necessary to clarify the types of inequality perceptions in the first place. Table 3 shows different dimensions of inequality perceptions considered in the present study. Unlike actual inequality based on the overall distribution of individuals' material condition, such as income, individuals can have their own perceptions of inequality. These perceptions are not necessarily restricted to perceptions of reality. We can also conceptualise not only how unequal a society should be (perception of norms) but also how fair the level of inequality is (perception of injustice).

[69] In the ISSP, each country has both household and personal income variables based on country-specific income categories, but these variables in each round, except for ISSP 1999, were not harmonised into variables with 10 income categories.

Table 4. *The Measures of Individuals' Inequality Perceptions*

Variable	Definition	Source
perceived actual inequality	subjective estimate of actual wage for top group divided by that of bottom group (see Question D in Appendix 1)	ISSP 1987, 1992, 1999, and 2009
personal norms of inequality	personal norms of wage for top group divided by that of bottom group (see Question E in Appendix 1)	ISSP 1987, 1992, 1999, and 2009
perceived injustice	discrepancy between perceived actual inequality and personal norms of inequality	ISSP 1987, 1992, 1999, and 2009
perceived income differences	answer to the question of whether differences in income are too large (see Question F in Appendix 1)	ISSP 1987, 1992, 1999, and 2009
perceived society type	diagram that best describes a society (see Question G in Appendix 1)	ISSP 1992, 1999, and 2009

The measures of perceived actual inequality and personal norms of inequality are continuous ones, not categorical variables, based on wage estimates across different occupations, as can be seen in Table 4. Additionally, the gap between perceived actual inequality and personal norms of inequality was measured to assess the level of perceived injustice. In fact, this approach used for this inquiry to develop the three inequality perception measures is not new. Kuhn (2011, 2015a, 2015b) employed a similar method using top and bottom groups' wage estimates, but he tried to formulate individual-level Gini coefficients with the relative size of the bottom group and its wage share based on subjective wage estimates for different occupations.[70] However, the measures developed by Kuhn have some drawbacks. For instance, some subjective Gini coefficients have negative values, which go beyond the range of conventional Gini coefficients; more fundamentally, a very small number of specific occupations employed cannot be a basis for estimating the distribution of the whole population in a country that is necessary to calculate the Gini coefficient.

[70] Kuhn's framework is in line with Osberg and Smeeding's (2006) method in the sense that they also tried to calculate individuals' subjective Gini coefficients, but their assumption is simpler and more problematic than Kuhn's—that there is an equal number of people in each occupation.

Accordingly, a more reasonable approach is to calculate the ratio of the level of wage estimates at the top to the level of wage estimates at the bottom, which is analogous to the percentile-ratio inequality measures in the actual income distribution. However, due to the highly skewed nature of the original ratios of those estimates, their logarithmic transformation was used following Schneider's (2012) approach.[71] To produce the measures, the top group consists of these three occupations: a doctor in general practice, a cabinet minister in the national government, and the chairman of a large national company. The bottom group is an unskilled worker in a factory. We selected these four occupations to maximise comparability because these occupations appear consistently in all four rounds of the survey: ISSP 1987, 1992, 1999, and 2009. Consequently, perceived actual inequality, personal norms of inequality, and perceived injustice were computed as follows:

$$perceived\ actual\ inequality\ (Inequality_i^{actual}) = \ln\left(\frac{subjective\ estimate\ of\ actual\ wage\ for\ top\ group}{subjective\ estimate\ of\ actual\ wage\ for\ bottom\ group}\right) = \ln\left(\frac{\frac{1}{3}(y_{actual}^{doctor} + y_{actual}^{minister} + y_{actual}^{chairman})}{y_{actual}^{unskilled}}\right)$$

$$personal\ norms\ of\ inequality\ (Inequality_i^{norm}) = \ln\left(\frac{subjective\ norm\ of\ wage\ for\ top\ group}{subjective\ norm\ of\ wage\ for\ bottom\ group}\right) = \ln\left(\frac{\frac{1}{3}(y_{norm}^{doctor} + y_{norm}^{minister} + y_{norm}^{chairman})}{y_{norm}^{unskilled}}\right)$$

$$perceived\ injustice\ (Injustice_i) = \ln\left(\frac{Inequality_i^{actual}}{Inequality_i^{norm}}\right) = \ln(Inequality_i^{actual}) - \ln(Inequality_i^{norm})$$

The estimated values of perceived actual inequality are always positive because there is no one who thinks that the top group's wage is less than or equal to the bottom

[71] Schneider's (2012) measures are based on Jasso's (2007) logarithmic-ratio specification of the justice evaluation function in which the actual reward is compared to the just reward.

group's wage. The values of personal norms of inequality are mostly positive, but there exists a value of zero if a person supports absolute equality in which there is no difference in wages between top and bottom groups.[72] With respect to the values of perceived injustice, a value of zero indicates that wage justice is assessed as being perfect, as an individual's perception of the reality is identical with that of the ideal. When a person judges that the level of perceived inequality is lower than it should be, the sign of perceived injustice is negative, whereas when a person judges that the level of perceived inequality is higher than it should be, perceived injustice has a positive sign.

Additionally, there are two more measures of inequality perception at the individual level: perceived income differences and perceived society type. The former is based on the response about the degree of income differences in a country (see Question F in Appendix 1), which assesses fairness of income distribution by implicitly capturing a disparity between perceived reality and perceived norms, although its scale is too rough. In this respect, this indicator can be classified as a measure in the domain of injustice perception in Table 3. This individual-level measure is an ordinal variable that has five categories, from 'strongly agree' to 'strongly disagree'. The data were taken from ISSP 1987, 1992, 1999, and 2009 (ISSP Research Group 2016). However, this variable is highly correlated with the dependent variables; thus, it is not used in the analyses.[73] Perceived society type is also an ordinal variable based on selecting a type of society that best describes a society (see Question G in Appendix 1; Type A illustrates the most unequal society, while Type E illustrates the most equal society),

[72] Of the respondents, 989 out of 77,555 (1.28%) favoured absolute wage equality.

[73] Polychoric correlation analysis shows that this measure is highly correlated with the variables of redistributive preferences (binary and ordinal) ($r = -0.57$ and -0.62, respectively).

and the data came from ISSP 1992, 1999, and 2009 (ISSP Research Group 2016). However, this measure is not included in the main analyses because it has critical limitations that Type E in the survey question is not distinctive from Type D in terms of the level of inequality.[74] In Table 3, furthermore, there is a country-level measure,[75] the perceived Gini, which is short for the Gini coefficient of perceived social position. This measure was estimated in the same way as calculating the Gini coefficient using the distribution of income (see Chapter 2 for more details).

Control variables

As for the individual-level control variables, age, sex, education, and union membership were gathered from ISSP 1987, 1992, 1999, and 2009 (ISSP Research Group 2016). Regarding the country-level controls, the perceived Gini discussed above was calculated by using the distribution of perceived social position on a top-to-bottom (10 to 1) scale; the data were collected from ISSP 1987, 1992, 1999, and 2009 (ISSP Research Group 2016). The market Gini, short for the Gini coefficient of market income, came from the Standardized World Income Inequality Database (SWIID) (Solt 2016). Economic development can be measured as the logarithm of real GDP per capita

[74] If we calculate the Gini coefficients of each diagram, following Gimpelson and Treisman's (2015) method, the Gini of Type D is 0.20, and the Gini of Type E is 0.21. However, this survey question was designed to clearly differentiate between those five types in terms of where the largest group of people is located in a social hierarchy. What is worse, those who chose Type E showed the second-highest level of aggregate redistributive preferences amongst the five groups. This result implies that respondents saw Type E as unequal as a hypothetical type between Type A and Type B. In sum, this survey question is problematic when used in the context of inequality rather than the majority's social position. Gimpelson and Treisman's (2015) perceived Gini based on perceived society type was therefore not used for the current analysis.

[75] Several studies have also employed different country-level measures of perceived inequality; however, they have obvious shortcomings. For instance, some measures are simply based on averaging the values of individuals' inequality measures. See Schalembier (2015) and Chapter 2 for more discussion on the country-level measures of perceived inequality.

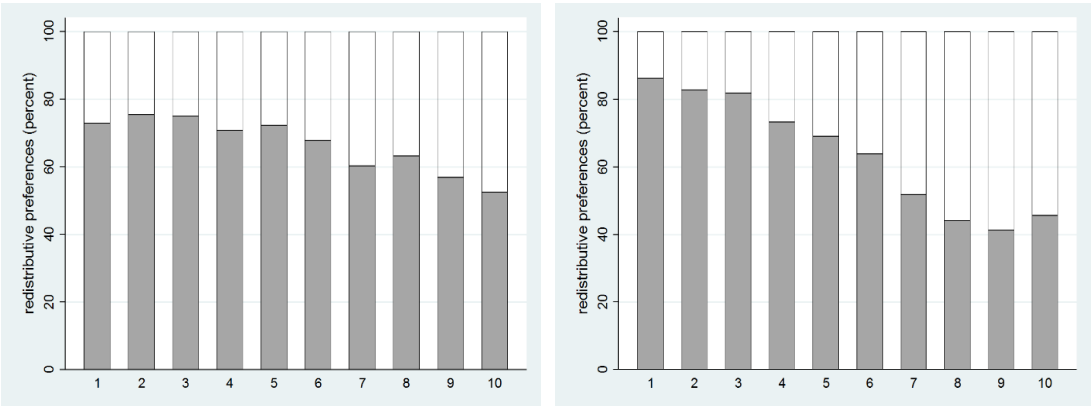
based on prices that are constant across countries and over time, and economic growth refers to the yearly percentage growth rate of real GDP at constant national prices; these two economic controls were produced by using the GDP data from the Penn World Table (Feenstra, Inklaar, and Timmer 2015). Ethnic diversity can be quantified by ethnic fractionalisation that measures the probability that two randomly selected individuals from a population belong to different groups; its maximum value of 1 means that each person belongs to a different group, whereas the minimum value of 0 means that each person belongs to the same group; the data were collected from Alesina et al. (2003).

Analysis and findings

Two different models were used to test the hypotheses. The first model is a function of objective and subjective social positions, using ISSP 1999, to test the social position hypothesis. The second model is a function of inequality perceptions to examine the inequality perception hypotheses, using ISSP 1987, 1992, 1999, and 2009. Given the fact that the dependent variable is binary in the primary analyses, the logistic regression was chosen as the baseline modelling framework in estimating each model. In a robustness check, the ordered logistic regression for an alternative dependent variable, which is an ordinal measure of redistributive preferences, was employed in both models. Additionally, the multilevel logistic regression to control for contextual effects at the country level was used for the second model.

There might be questions about endogeneity between perceptions of inequality and support for redistribution. It is plausible that those who favour redistribution may perceive more inequality and have more equal distributional norms than those who do

not support redistribution to rationalise their redistributive preferences. That is, the causality between inequality perceptions and redistributive preferences might run in both directions. Few researchers have tried to tackle the endogeneity issue by introducing instrumental variables, except for Kuhn (2015a, 2015b). In this study, following Dustmann and Preston's (2001) approach, which suggests an instrument at a higher level of spatial aggregation, the regional means of the inequality perception measures in each country were used as instruments in an extra analysis. Regarding the estimation techniques, the probit model with continuous endogenous regressors (*ivprobit* in Stata), a conditional mixed-process (*cmp*) estimator, developed by Roodman (2011), with the probit model, and two-stage least squares (2SLS) were alternatively employed, as shown in Table 5 and Appendix 10.



(a) objective social position (b) perceived social position

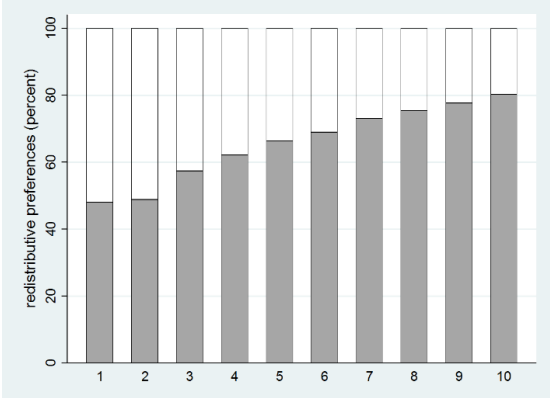
Figure 1. Individuals' social position and redistributive preferences. Notes: The graphs are based on Questions A, B, and C in Appendix 1, using ISSP 1999. The 'redistributive preferences' bar represents the percentage of the respondents in favour of redistribution who answered with 'strongly agree' or 'agree' in each category from bottom to top (1 to 10) of the social position measures above. See Appendix 5 for the country-specific graphs illustrating the relationship between perceived social position and redistributive preferences.

Before moving on to the empirical results, Figure 1 presents graphical evidence that both objective and subjective social positions significantly matter in terms of redistributive preferences. More importantly, the effect of objective social position seems to be weaker than that of perceived social position, as Graph (b) shows a steeper slope than Graph (a). Columns (1) and (2) in Table 5 clearly support this evidence. The remaining columns also consistently indicate that the effect size of perceived social position is greater than that of objective social position, as predicted by *Hypothesis 1*. Specifically, Column (3) shows that for a one-unit increase in perceived social position, we can see about 17.4% decrease in the odds of an individual being in favour of redistribution, and a one-unit increase in objective social position reduces the odds by 10.9%. Moreover, we can also check the marginal effects of the variables in Column (3): Increasing perceived social position by one standard deviation on average decreases the probability of the support for redistribution by 5.5%; increasing objective social position by one standard deviation decreases the probability by 4.9%.[76] This finding that the effect of perceived social position is substantively stronger than that of objective social position is also robust to an alternative dependent variable, as estimated in Appendix 7.

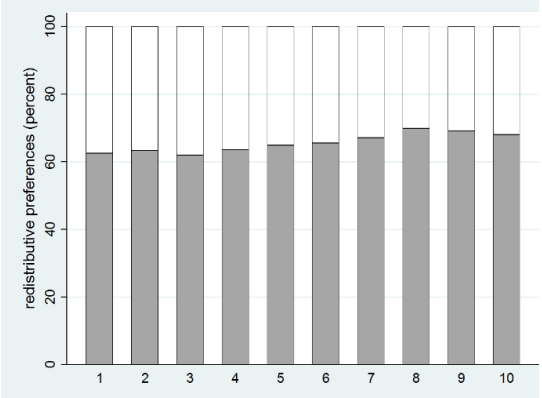
Graphical evidence in Figure 2 illustrates the relationships between perceptions of inequality and redistributive preferences. Graph (a) shows the level of aggregate redistributive preferences in percentage across the decile groups of perceived injustice; there is a clear increasing trend when the gap between perceived actual inequality and personal norms of inequality increases. Graph (b) does not indicate a distinct feature

[76] These marginal effects were calculated by using *mchange* command in Stata. Meanwhile, the direct comparisons of these impacts should be treated with caution because each variable has its own underlying features.

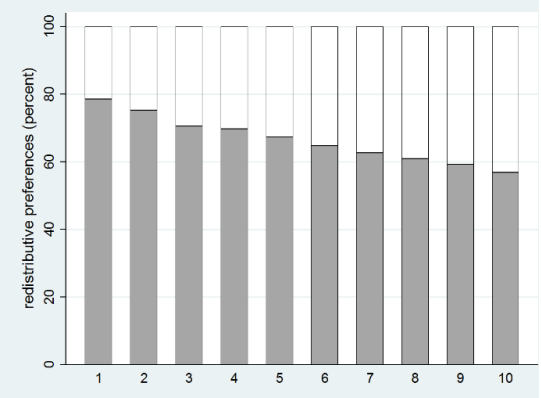
compared to other graphs, although redistributive preferences increase slightly in the upper deciles of perceived actual inequality. Graph (c) provides a descending trend in redistributive preferences when the level of personal norms of inequality goes up; in other words, the more inequality people regard as desirable, the less redistributive preferences result.



(a) perceived injustice deciles



(b) perceived actual inequality deciles



(c) personal norms of inequality deciles

Figure 2. Individuals' inequality perceptions and redistributive preferences. Notes: The graphs are based on Questions A, D, and E in Appendix 1, using ISSP 1987, 1992, 1999, and 2009. The 'redistributive preferences' bar represents the percentage of the respondents in favour of redistribution who answered with 'strongly agree' or 'agree' in each decile of the inequality perception measures above. See Appendix 6 for the country-specific graphs illustrating the relationship between personal norms of inequality and redistributive preferences.

Additionally, the polychoric correlation analysis was conducted to assess the strength and direction of the association between inequality perception measures, which are continuous variables, and redistributive preferences, which represent a dichotomous variable: $r = 0.06$, -0.18, and 0.22 for perceived actual inequality, personal norms of inequality, and perceived injustice, respectively; all the correlation coefficients are significantly different from zero. These statistical correlations are consistent with the graphical evidence.

Table 5. *Comparison of the Effects of Social Position on Redistributive Preferences*

	redistributive preferences (binary)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
objective social position	-0.139		-0.103	-0.096	-0.054	-0.104	-0.059
	(0.020)***		(0.019)***	(0.020)***	(0.012)***	(0.021)***	(0.012)***
perceived social position		-0.204	-0.160	-0.138	-0.080	-0.140	-0.082
		(0.017)***	(0.015)***	(0.020)***	(0.011)***	(0.020)***	(0.012)***
perceived actual inequality				0.505	0.181		
				(0.063)***	(0.280)		
					[9773.73]		
personal norms of inequality				-0.881	-0.757		
				(0.086)***	(0.189)***		
					[5921.70]		
perceived injustice						0.659	0.621
						(0.068)***	(0.247)**
							[2100.17]
individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
pseudo R-squared	0.117	0.119	0.125	0.149	0.147	0.144	0.143
observations	15,475	15,475	15,475	11,686	11,686	11,686	11,686
countries	20	20	20	20	20	20	20

Notes: Columns (1), (2), (3), (4), and (6) report the logistic regressions with robust standard errors clustered by country in parentheses; the constant terms are not reported. Columns (5) and (7) report *cmp* estimations with the probit models and robust standard errors clustered by country in parentheses; the first stages and constant terms are not reported. The regional means of the perceived actual inequality, personal norms of inequality, and perceived injustice were used as instruments for the *cmp* estimations with the probit models. In Columns (5) and (7), the F-statistic associated with the first-stage effect of the instrument on the endogenous variable is reported in brackets; if the F-statistic is less than 10, according to the rule of thumb by Staiger and Stock (1997), there is a weak instruments problem. Pseudo R-squared and observations are the results of the first-stage. Individual controls include age, sex, education, and union membership. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6. *The Effects of Inequality Perceptions on Redistributive Preferences*

	redistributive preferences (binary)					
	(1)	(2)	(3)	(4)	(5)	(6)
perceived actual inequality	0.517	0.523	0.582			
	(0.065)***	(0.061)***	(0.096)***			
personal norms of inequality	-0.889	-0.904	-0.900			
	(0.071)***	(0.070)***	(0.077)***			
perceived Injustice				0.445	0.458	0.474
				(0.041)***	(0.035)***	(0.046)***
perceived social position	-0.215	-0.198	-0.192	-0.213	-0.200	-0.189
	(0.010)***	(0.011)***	(0.012)***	(0.010)***	(0.010)***	(0.011)***
age		0.005	0.004		0.002	0.001
		(0.001)***	(0.001)***		(0.001)**	(0.002)
sex		0.230	0.220		0.216	0.207
		(0.027)***	(0.032)***		(0.026)***	(0.029)***
education		-0.051	-0.061		-0.049	-0.060
		(0.007)***	(0.010)***		(0.007)***	(0.009)***
union membership		0.284	0.217		0.279	0.265
		(0.031)***	(0.044)***		(0.035)***	(0.049)***
market Gini			-0.021			-0.027
			(0.012)*			(0.012)**
perceived Gini			0.095			0.087
			(0.023)***			(0.020)***
economic development			0.155			0.134
			(0.118)			(0.113)
economic growth			-0.034			-0.037
			(0.014)**			(0.015)**
ethnic fractionalisation			-0.009			-0.012
			(0.005)**			(0.005)**
country×year fixed effects	Yes	Yes	No	Yes	Yes	No
pseudo R-squared	0.130	0.146	0.105	0.116	0.130	0.090
observations	70,134	56,557	55,065	63,127	51,151	49,797
clusters	71	67	65	71	67	65

Notes: Entries are logistic regression coefficients with robust standard errors clustered by country×year in parentheses; the constant terms are not reported. * significant at 10%; ** significant at 5%; *** significant at 1%.

Because of the dependency, the effect of perceived injustice was explored separately in Tables 5 and 6 as well as in Appendices 7–10. In Table 6, all the columns consistently demonstrate that perceived actual inequality and perceived injustice are significantly and positively associated with redistributive preferences, while personal norms of inequality are significantly but negatively linked to redistributive preferences.

These findings buttress *Hypotheses 2, 3,* and *4*, as expected. They are also robust to the alternative dependent variable that is an ordinal one, the different estimator of multilevel logistic regression, and the instrumental variables estimations, as can be seen in Appendices 8, 9, and 10.

With respect to individual-level control variables, perceived social position, age, sex, education, and union membership show strong association with redistributive preferences, as predicted. Regarding the contextual variables, the market Gini shows a negative association with redistributive preferences in Table 6, albeit not quite significant, while its effect is insignificant when the different dependent variable or the multilevel logistic regression was used (see Appendices 8 and 9). The perceived Gini is significantly linked to preferences for redistribution, as hypothesised. The effects of economic development and ethnic fractionalisation are not robust to the different estimation models, whereas the effect of economic growth is significantly negative across the models.

Specifically, in Column (1) in Table 6, the results show that an increase of one standard deviation in perceived actual inequality, on average, leads to an increase of the odds of an individual being in favour of redistribution by a multiple of 1.539; in terms of percentage change, in this case, we can say that the odds for an individual to support redistribution are 53.9% higher than the odds for the individual being against redistribution. Next, for an increase of one standard deviation in personal norms of inequality, the odds increase by a multiple of 0.546, which can be converted into its corresponding ratio counterpart above 1.0 by taking the inverse of the odds: $1/0.546 = 1.832$. In other words, a variation of one standard deviation leads to a change of 53.9% in the odds for perceived actual inequality and a change of 83.2% for personal norms of inequality. These relative effect sizes are almost the same as those

in Columns (2) and (3) of Table 6 and in Columns (1), (2), and (3) of Appendices 8 and 9.

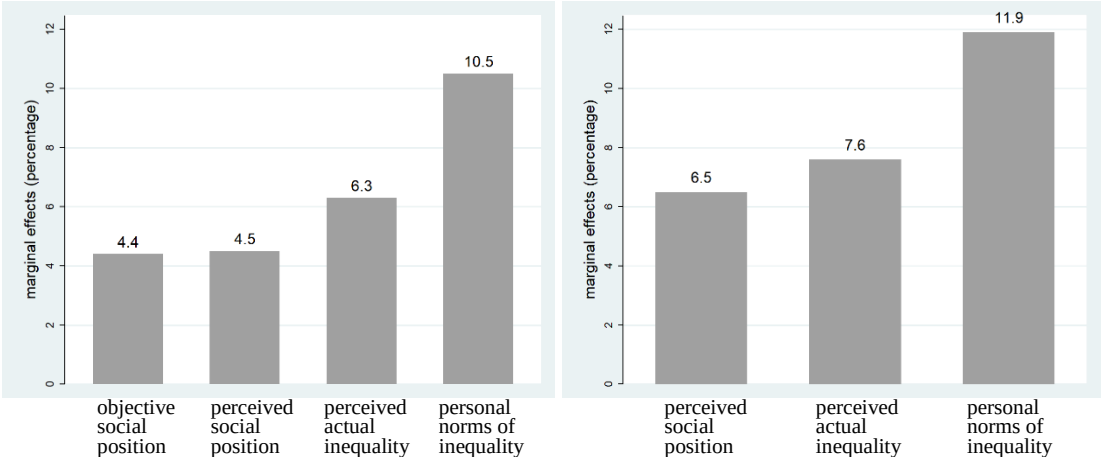


Figure 3. The marginal effects of social positions and inequality perceptions on redistributive preferences. Notes: The marginal effects were estimated at a one standard-deviation-change of the variables, and the absolute values of the effects were used for the sake of comparison. Graph (a) is based on Column (4) in Table 5, and Graph (b) is based on Column (2) in Table 6.

Additionally, we can compare the marginal effects of the variables per one standard deviation: in the case of Column (1) in Table 6, an increase in perceived actual inequality increases the probability of the support for redistribution by 7.7%; an increase in personal norms of inequality decreases the probability by 12.0%.[77] These marginal effects are also almost the same as those in Column (2) in Table 6, as shown in Graph (b) of Figure 3. We can thus conclude that personal norms of inequality play

[77] This finding stands opposite to Kuhn's (2011, 635) in that the marginal effect of actual inequality, which is comparable to perceived actual inequality here, is slightly stronger than that of ethical inequality, which is comparable to personal norms of inequality here: An increase of actual inequality by one standard deviation (0.095) leads to a rise in the support for redistribution by $0.32\ (= 3.345 \times 0.095)$, while an increase of ethical inequality by one standard deviation (0.108) leads to a decrease by $-0.30\ (= -2.796 \times 0.108)$.

a more crucial role in forming individuals' redistributive preferences than does perceived actual inequality. Furthermore, Figure 3 illustrates that the marginal effect of the objective social position is the weakest, which contradicts the basic premise of the standard model of redistribution, while the marginal effect of the personal norms of inequality is the strongest.

Moreover, the fact that both perceived actual inequality and personal norms of inequality are significant implies that the discrepancy between them is also significant, which is confirmed in Columns (4), (5), and (6) of Table 6, Columns (6) and (7) of Table 5, and all the other relevant models in Appendices 7–10. When it comes to the distribution of perceived injustice, while a small number of respondents agreed that wage differences should increase more than their perceptions of actual wage gaps, a significant majority of respondents expressed the belief that perceived actual wage inequality is higher than the desired level of wage inequality. Amongst 72,863 observations of perceived injustice in OECD countries, 65,511 (89.91%) observations have positive values, 5,412 (7.43%) observations have negative values, and 1,940 (2.66%) observations have a value of zero, which means that justice is evaluated as being perfect. Overall, most people agreed that wage distributions should be more equal than they are, but this does not necessarily mean that all of them favour redistribution; about 20% even amongst those who believe that their society is the most unjust (10th decile group) do not support redistribution, as illustrated in Graph (a) in Figure 2.

Additionally, perceived social position has a significant and negative impact on redistributive preferences in all the columns of Table 6, as hypothesised. This finding

is consistent with that of Brown-Iannuzzi et al. (2015) as well as the results in Table 5. Graph (b) of Figure 1 also illustrates a clear relationship between them.[78]

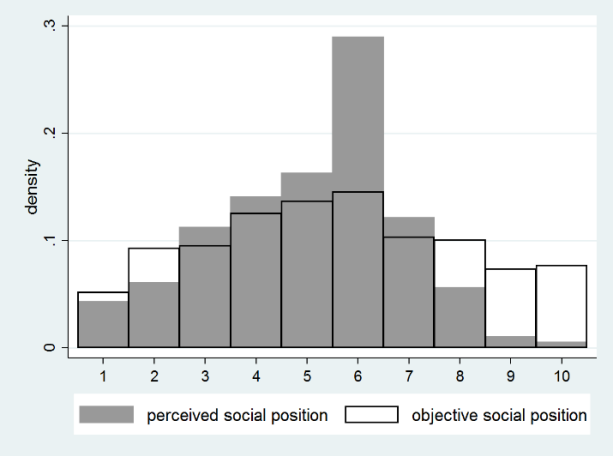


Figure 4. Comparison of the distribution of perceived social position with that of objective social position. Notes: The density histogram is based on the distribution of the responses for Questions B and C in Appendix 1, using ISSP 1999 including 20 OECD countries. Country-specific density histograms are presented in Appendix 4.

Furthermore, Figure 4 indicates that the distribution of perceived social position is clearly different from that of objective social position. This is consistent with a noticeable tendency for people to see themselves as being in the middle of the social hierarchy, according to the theories developed in social psychology (Evans and Kelley 2004; Kelley and Evans 1995; Merton 1968, chaps. 9–10; Stouffer et al. 1949).[79] It

[78] The highest level of perceived social position group shows that a greater proportion of individuals in this group favour redistribution than that of level 8 or level 9, but it is not meaningful because the sample size of that group is very small compared to other groups: In ISSP 1999, amongst 103 out of 21,204 respondents (0.49%), 47 individuals (46%) supported redistribution. Moreover, it is not surprising that, amongst the top 1% or so of U.S. wealth-holders (83 respondents), only 13% favoured redistributive action by government when the same question as Question A in Appendix 1 was used (Page, Bartels, and Seawright 2013, 64).

[79] According to a reference-group theory, 'most people see themselves as average and unexceptional. Even very high-status people place many others above themselves and very low-status people see others even lower. Hence, most people locate themselves near the middle of class hierarchy' (Lindemann 2007, 55). Moreover, Bublitz (2016) and Cruces, Perez-Truglia, and Tetaz

also explains the discrepancy between actual income inequality and perceived inequality based on the distribution of subjective social position.

One thing to note is that the perceived Gini based on the distribution of perceived social position is also strongly associated with redistributive preferences. Thus, it turns out that both perceived social position and its distributional structure as a contextual factor matter in the formation of individual preferences for redistribution. By contrast, the effect of market inequality on individuals' redistributive preferences has a consistent negative sign across the different models, although its significance is quite marginal or negligible. That is, this empirical evidence does not support the standard redistribution hypothesis that an increase in market inequality leads to a rise in support for redistribution.

Discussion and conclusion

Many previous studies trying to explain redistribution are premised on the idea that policy preferences determined by economic situation lead to policy outcomes at the society level. This hypothesis implies that an individual's objective social location shapes his or her preferences for redistribution, regardless of whether or not aggregate redistributive preferences translate into redistribution. This inquiry challenges this individual-level mechanism that is embedded in the conventional redistribution theory in the following ways: first, by directly comparing objective social status to subjective social status in terms of the effect on redistributive preferences and second, by

(2013) presented considerable empirical evidence that low-income earners have positive biases (overestimating their income position), whereas high-income earners have negative biases (underestimating their income position).

demonstrating the significant role of subjective inequality perceptions in preference formation.

The empirical evidence shows that the distribution of redistributive preferences is more strongly associated with subjective social status than actual income location, as Graphs (a) and (b) in Figure 1 illustrate. The effect of objective social position on redistributive preferences is also weaker than that of perceived social position in statistical terms, as shown in Table 5 and Figure 3. Accordingly, the premise of the standard redistribution model based on the decisive role of actual income is not corroborated.

However, this finding should be interpreted with caution because of the measurement errors, such as social desirability bias, in the social position variables based on self-reporting. Survey respondents tend to underreport socially undesirable activities and overreport socially desirable ones. This bias becomes significant when sensitive questions, such as sexual activities and illegal behaviours, are asked. Income or wealth questions are also considered to be sensitive and thus yield very high non-response rates and reporting errors (Juster and Smith 1997; Moore, Stinson, and Welniak Jr. 2000). Moreover, there is strong evidence that level of misreporting depends on features of the survey design when questions are sensitive (Tourangeau and Yan 2007); self-completion mode rather than face-to-face mode encourages respondents to answer more honestly, for example.

Despite the social desirability bias on the self-reported income, since the objective income position variable in the ISSP 1999 is based on top-coding and ordinal income intervals, the potential of the bias to influence the estimates for redistributive preferences can be effectively mitigated (Hariri and Lassen 2017). Also, the effect of perceived social position is expected to be less biased than that of objective social

position, considering that there is a far lower level of non-response rate and that the response rate has a negligible difference between administrative modes of data collection in the perceived social position variable,[80] which is indirect evidence of a low level of social desirability bias.

We also explored not only the level of wage inequality that individuals perceive but also the level of wage inequality that they view as just. Then the link between these perceptions of inequality and redistributive preferences was investigated by using the new inequality perception measures developed here. The results indicate that both individuals' assessment of actual inequality and their distributional norms significantly matter in shaping individual preferences for redistribution. These findings confirm that the demand for redistribution is driven not only by pure economic self-interest but also by other-regarding preferences; furthermore, the marginal effects of the subjective and relative self-interest, perceived actual inequality, and personal norms of inequality are stronger than that of objective and absolute self-interest, as discussed above.

Accordingly, we can conclude that people are self-interested but also concerned about the payoffs of others, which implies that support for redistribution is a complex phenomenon driven by multiple motivations. Furthermore, this chapter provided evidence that subjective self-interest has a stronger impact on support for redistribution than objective economic self-interest and that the effect of personal norms of inequality

[80] Amongst the ISSP surveys used in the main analysis, administrative mode is recorded only in ISSP 2009. In the variable of objective social position, the non-response rate of face-to-face mode is 19.77% (7,478 observations), and that of self-completion mode is 18.54% (3,228 observations); in the variable of perceived social position, however, the non-response rate of face-to-face mode is 1.67% (630 observations), and that of self-completion mode is 1.69% (294 observations). From the facts that the level of non-response rate is very low in the perceived social position variable and that the difference between the modes is negligible (0.02%), we can infer that the question asking perceived social position is far less sensitive than that on objective social position, thus generating more accurate responses.

is stronger than that of perceived actual inequality. Considering that the measure of subjective self-interest is based on the relative standing of an individual compared to others and that personal norms of inequality might be related to social norms or justice in some ways, the current study contributes to behavioural economics on other-regarding preferences as well as redistributive politics by presenting the convincing evidence of social preferences in the field beyond laboratory experiments.

The findings of this study contradict those of Finseraas (2009), which show a positive relationship between net income inequality and an individual's support for redistribution. Finseraas (2009, 101) admitted that using net income inequality is an 'obvious shortcoming', but data availability prevented him from employing the market income inequality factor that 'the M-R [Meltzer-Richard] model refers to'. However, the impacts of both net inequality and market inequality on individuals' redistributive preferences are not robust in the present analyses.[81]

Kuhn (2011, 637) claimed that a close association between subjective inequality measures and redistributive preferences provides 'indirect evidence' of the link between individual perceptions of inequality and redistribution. However, according to the empirical evidence supplied in Chapter 2, there is no such indirect evidence because support for redistribution does not straightforwardly translate into redistribution. Thus, replacing a measure of actual inequality with a perceived inequality measure is not enough to rescue the conventional redistribution hypothesis rooted in the positive relationship between actual inequality and redistribution.

The key findings of the current study have grave theoretical and practical implications. First and foremost, this study demonstrates that subjective social location

[81] The results of the effect of market inequality are reported in Table 6 and Appendices 8 and 9, but those of net inequality are not reported here.

is more influential than objective social location in forming preferences for redistribution. This evidence undermines the underlying mechanism of the Meltzer-Richard model by highlighting a stronger predictor of attitudes towards redistribution than pure economic self-interest. In the existing literature, there have been attempts to find other significant factors, not only individual current income, for redistributive preferences. For instance, the effect of individual mobility experience from Piketty's (1995) learning model has empirical support (e.g., Guillaud 2013; Pfarr 2012); however, prior studies, except for some experimental research (e.g., Brown-Iannuzzi et al. 2015), did not challenge the supremacy of current income by providing empirical evidence.

Second, one of the findings indicating that the perceived Gini, not the market Gini, is strongly associated with individuals' redistributive preferences enhances the evidence of the country-level analysis provided in Chapter 2. Taken together, it can be said that there is little evidence of a link between actual inequality—the market Gini—and redistributive preferences at both the country and individual levels, whereas the distribution of perceived social position—the perceived Gini—is closely associated with both country- and individual-level preferences for redistribution. It is therefore argued that the standard model of redistribution derived from the Meltzer-Richard model, which relies entirely on actual inequality, is no longer tenable.

Third, this research reveals that personal norms of inequality are a more significant factor than perceived actual inequality in terms of forming redistributive preferences. There is insufficient attention to the fact that misperception of inequality is only a part of the story that explains preferences over redistribution. In this regard, the findings of Bublitz (2016) can be revisited that correcting biased perceptions of income position does not consistently change opinions towards redistribution. In the same vein, Bartels (2005, 25) pointed out 'real and profound limits of political information as a

transforming force' when it comes to policy preferences. These empirical results have already implied the existence of other cognitive factors that are distinct from perceived actual inequality or perceived self-interest; the compelling evidence presented here strengthens this perspective.

Last, with respect to policy implications, the fact that individuals' inequality norms strongly affect policy preferences reminds us of the importance of social interventions targeting norm perceptions. Considering that personal norms can be understood as being internalized social norms (Thøgersen 2009), a better understanding of the personal and social norms of inequality may enable us to figure out a more effective way of changing these norms that may make a difference in policy preferences. There is no guarantee that policy preferences directly translate into policy outcomes because of the complex social and political processes (see Powell 2005); however, there is no supply without demand. It is hoped that not only psychologists but also political scientists can come to see 'norm perception as a vehicle for social change' (Tankard and Paluck 2016, 182).

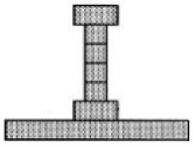
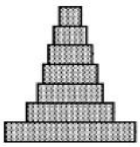
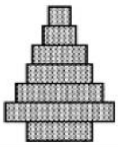
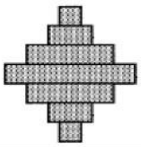
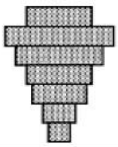
Supplementary materials

Supplementary materials are available at http://doi.org/10.3886/E101258V2.

Appendix 1. Survey questions

Variable	Question	Source
redistributive preferences (binary)[a] / redistributive preferences (ordinal)	A. To what extent do you agree or disagree with the following statements? It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes. (1 Strongly agree, 2 Agree, 3 Neither agree nor disagree, 4 Disagree, 5 Strongly disagree)	ISSP 1987, 1992, 1999, and 2009
objective social position	B. What will be/was the total annual income of your household before taxes for all of 1999? (10 the highest, 9, 8, 7, 6, 5, 4, 3, 2, 1 the lowest)	ISSP 1999
perceived social position / perceived Gini[b]	C. In our society there are groups which tend to be towards the top and groups which tend to be towards the bottom. Below is a scale that runs from top to bottom. Where would you put yourself now on this scale? (10 the top, 9, 8, 7, 6, 5, 4, 3, 2, 1 the bottom)	ISSP 1987, 1992, 1999, and 2009
perceived actual inequality	D. We would like to know what you think people in these jobs actually earn. Please write in how much you think they usually earn each year, before taxes. Many people are not exactly sure about this, but your best guess will be close enough. This may be difficult, but it is very important. So please try.	ISSP 1987, 1992, 1999, and 2009
personal norms of inequality	E. Next, what do you think people in these jobs ought to be paid—how much do you think they should earn each year, before taxes, regardless of what they actually get? (Please write in how much they should earn each year, before tax.)	ISSP 1987, 1992, 1999, and 2009
perceived income differences	F. To what extent do you agree or disagree with the following statements? Differences in income in <R's country> are too large. (1 Strongly agree, 2 Agree, 3 Neither agree nor disagree, 4 Disagree, 5 Strongly disagree)	ISSP 1987, 1992, 1999, and 2009
perceived society type	G. These five diagrams show different types of society. Please read the descriptions and look at the diagrams and decide which you think best describes <R's country>. What type of society is <R's country> today—which diagram comes closest? (1 Type A, 2 Type B, 3 Type C, 4 Type D, 5 Type E)[c]	ISSP 1992, 1999, and 2009

Notes: [a] This variable of redistributive preferences is a dichotomous one, in which 1 is assigned to the answers 'strongly agree' or 'agree'. [b] The perceived Gini is a country-level indicator calculated by using the frequency distribution of the responses to this survey question; see Chapter 2 for more details. [c] See the figure below.

Q14. These five diagrams show different types of society. Please read the descriptions and look at the diagrams and decide which you think best describes <country> ..				
				
Type A	**Type B**	**Type C**	**Type D**	**Type E**
A small elite at the top, very few people in the middle and the great mass of people at the bottom.	A society like a pyramid with a small elite at the top, more people in the middle, and most at the bottom.	A pyramid except that just a few people are at the bottom.	A society with most people in the middle.	Many people near the top, and only a few near the bottom.

Source: ISSP 2009 Social Inequality IV Final questionnaire (August 2008)

Appendix 2. Descriptive statistics (individual level)

variable	observations	mean	std. dev.	min	max
redistributive preferences (binary)	93,519	0.67	0.47	0	1
redistributive preferences (ordinal)	93,519	3.72	1.16	1	5
objective social position (ISSP 1999)[a]	21,959	5.53	2.54	1	10
perceived social position (ISSP 1999)[b]	21,959	5.05	1.84	1	10
perceived social position	96,489	5.17	1.79	1	10
perceived actual inequality	76,368	2.03	0.83	0.37	5.63
personal norms of inequality	77,555	1.36	0.68	0	4.48
perceived injustice	72,863	0.67	0.64	-4.01	5.63
perceived income differences	94,594	1.88	0.96	1	5
perceived society type	67,470	2.49	1.15	1	5
age	97,873	45.87	17.39	1	98
sex	99,198	1.53	0.50	1	2
education	86,214	11.89	3.98	1	81
union membership	82,101	0.26	0.44	0	1

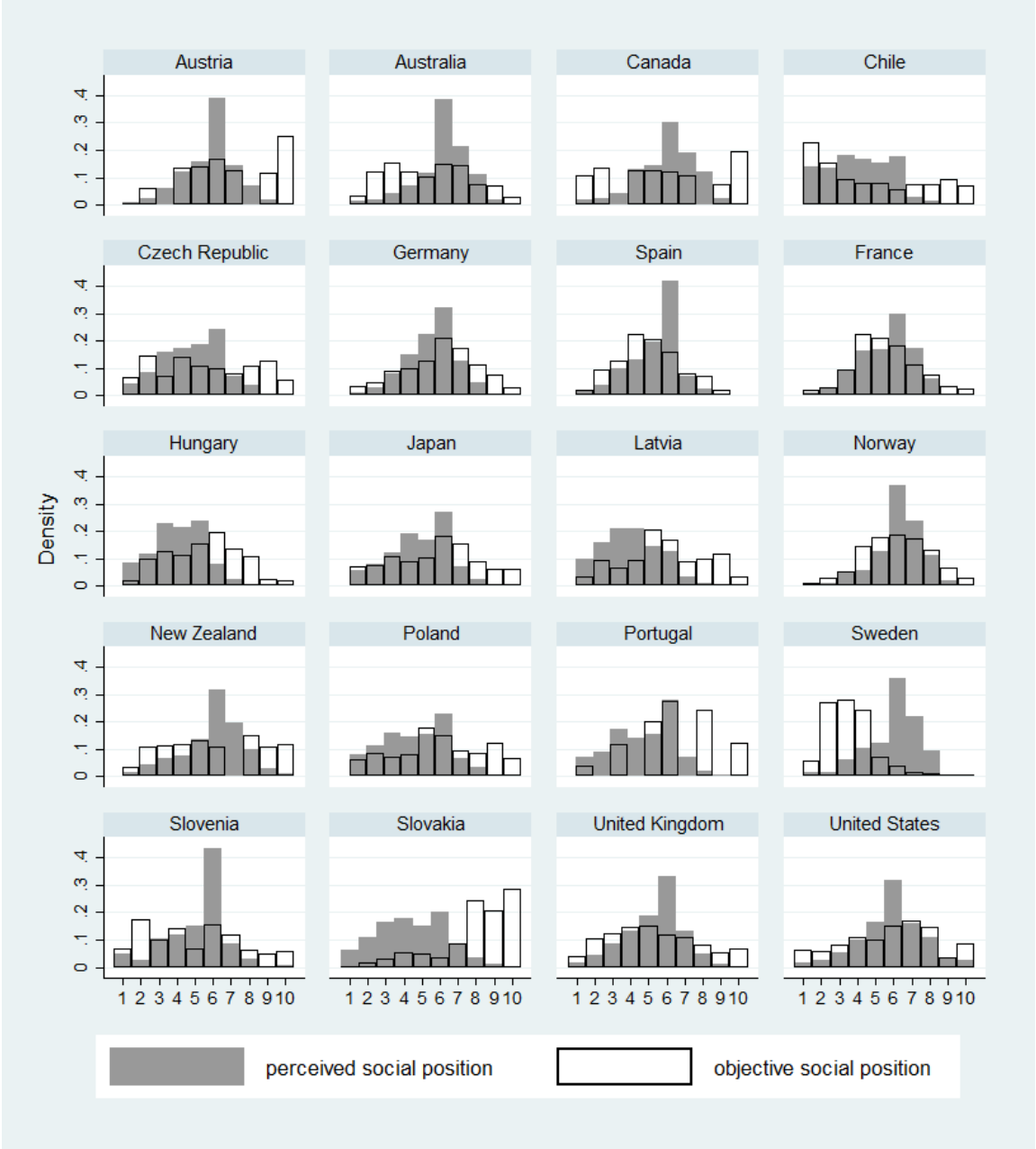
Note: [a] [b] Both variables based on ISSP 1999 were exclusively used in Table 5, Figures 1 and 3, and Appendices 4 and 7.

Appendix 3. Survey country-year observations in the analysis

Country	ISSP 1987		ISSP 1992		ISSP 1999		ISSP 2009	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Australia	1,529	1,378	1,870	1,922	1,530	1,429	1,487	1,283
Austria	948	858	1,018	0	1,005	1,014	1,019	927
Belgium	.	.	.	.	.	.	1,100	949
Canada	.	.	964	843	954	870	.	.
Chile	.	.	.	.	1,503	758	1,490	1,269
Czech Republic	.	.	.	.	1,825	1,579	1,204	1,118
Denmark	.	.	.	.	.	.	1,498	1,291
Estonia	.	.	.	.	.	.	983	935
Finland	.	.	.	.	.	.	853	781
France	.	.	.	.	1,857	1,596	2,765	2,253
Germany	1,371	1,214	3,353	2,856	1,408	1,037	1,362	1,196
Hungary	2,542	1,924	1,239	1,015	1,195	844	1,008	840
Iceland	.	.	.	.	.	.	925	874
Israel	.	.	.	.	1,204	1,152	1,172	961
Italy	1,027	0	996	943	.	.	1,061	912
Japan	.	.	.	.	1,291	516	1,280	508
Latvia	.	.	.	.	1,091	976	1,038	862
Netherlands	1,594	1,297	.	.	.	.	.	.
New Zealand	.	.	1,194	1,066	1,108	979	914	841
Norway	.	.	1,502	1,325	1,250	939	1,438	1,376
Poland	3,625	1,417	1,616	1,330	1,088	894	1,257	962
Portugal	.	.	.	.	1,144	970	950	608
Slovakia	.	.	.	.	1,082	1,019	1,125	1,044
Slovenia	.	.	926	943	912	908	995	837
South Korea	.	.	.	.	.	.	1,599	1,553
Spain	.	.	.	.	1,174	697	1,177	855
Sweden	.	.	749	620	1,135	960	1,125	998
Switzerland	962	790	.	.	.	.	1,216	1,005
Turkey	.	.	.	.	.	.	1,541	1,270
United Kingdom	1,159	996	1,043	900	1,581	1,202	936	790
United States	1,497	1,222	1,247	1,085	1,120	874	1,543	1,300

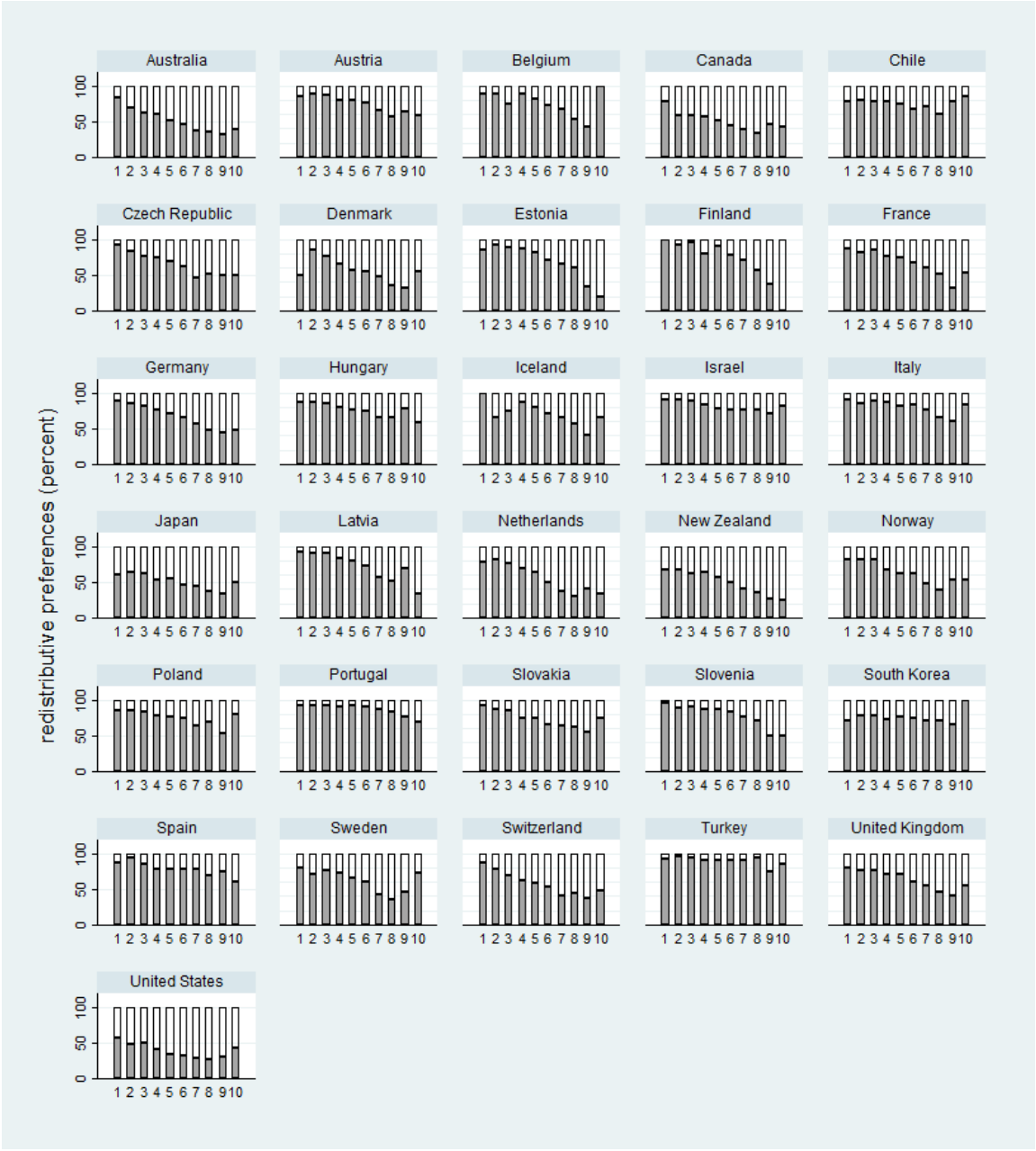
Notes: In each wave, (a) and (b) indicate the numbers of valid observations of the perceived social position and personal norms of inequality variables, respectively. Each country's fieldwork dates for a given ISSP module are not always the same as the specific calendar year of the module, and thus the coding of the country-years in the country-level control variables was conducted following the actual fieldwork dates. The ISSP 1999 data (Switzerland) were not integrated into the international file because the data do not meet the required methodological standard.

Appendix 4. Country-specific comparison of the distribution of perceived social position with that of objective social position



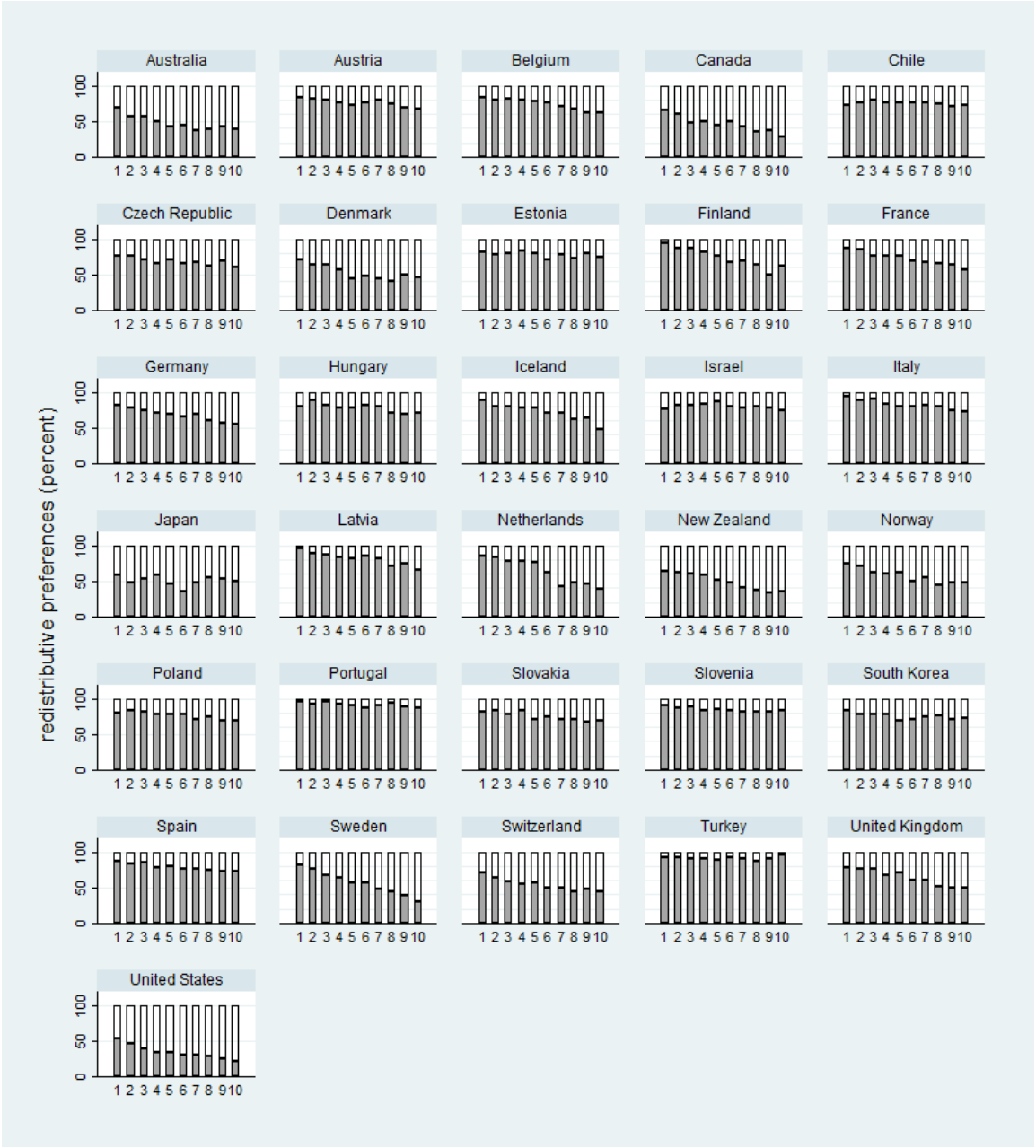
Note: The density histograms are based on the distribution of the responses for Questions B and C in Appendix 1, using ISSP 1999 including 20 OECD countries.

Appendix 5. Perceived social position and redistributive preferences



Notes: The country-specific graphs are based on Questions A and C in Appendix 1, using ISSP 1987, 1992, 1999, and 2009, which were pooled together by country (see Appendix 3). The 'redistributive preferences' bar represents the percentage of the respondents in favour of redistribution who answered with 'strongly agree' or 'agree' in each category from bottom to top (1 to 10) of the perceived social position measure.

Appendix 6. Personal norms of inequality and redistributive preferences



Notes: The country-specific graphs are based on Questions A and E in Appendix 1, using ISSP 1987, 1992, 1999, and 2009, which were pooled together by country (see Appendix 3). The 'redistributive preferences' bar represents the percentage of the respondents in favour of redistribution who answered with 'strongly agree' or 'agree' in each decile of the personal norms of inequality measure.

Appendix 7. The effects of social position on preferences (ordinal)

	redistributive preferences (ordinal)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
objective social position	-0.132		-0.097	-0.093	-0.053	-0.099	-0.056
	(0.022)***		(0.020)***	(0.020)***	(0.011)***	(0.022)***	(0.012)***
perceived social position		-0.199	-0.159	-0.135	-0.079	-0.137	-0.080
		(0.020)***	(0.017)***	(0.018)***	(0.010)***	(0.018)***	(0.010)***
perceived actual inequality				0.543	0.438		
				(0.055)***	(0.200)**		
					[9773.73]		
personal norms of inequality				-0.792	-0.640		
				(0.093)***	(0.203)***		
					[5921.70]		
perceived injustice						0.641	0.641
						(0.062)***	(0.200)***
							[2100.17]
individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
pseudo R-squared	0.070	0.072	0.075	0.090	0.088	0.088	0.086
observations	15,475	15,475	15,475	11,686	11,686	11,686	11,686
countries	20	20	20	20	20	20	20

Notes: Columns (1), (2), (3), (4), and (6) report the ordered logistic regressions with robust standard errors clustered by country in parentheses; the cut-points are not reported. Columns (5) and (7) report *cmp* estimations with the ordered probit models and robust standard errors clustered by country in parentheses; the first stages and cut-points are not reported. The regional means of the perceived actual inequality, personal norms of inequality, and perceived injustice were used as instruments for the *cmp* estimations with the ordered probit models. In Columns (5) and (7), the F-statistic associated with the first-stage effect of the instrument on the endogenous variable is reported in brackets, and pseudo R-squared and observations are the results of the first-stage. Individual controls include age, sex, education, and union membership. * significant at 10%; ** significant at 5%; *** significant at 1%.

Appendix 8. The effects of inequality perceptions on preferences (ordinal)

	redistributive preferences (ordinal)					
	(1)	(2)	(3)	(4)	(5)	(6)
perceived actual inequality	0.528	0.535	0.598			
	(0.059)***	(0.052)***	(0.090)***			
personal norms of inequality	-0.846	-0.859	-0.871			
	(0.065)***	(0.062)***	(0.065)***			
perceived injustice				0.467	0.477	0.506
				(0.038)***	(0.034)***	(0.050)***
perceived social position	-0.211	-0.196	-0.192	-0.208	-0.195	-0.189
	(0.010)***	(0.011)***	(0.013)***	(0.009)***	(0.010)***	(0.012)***
age		0.004	0.004		0.002	0.003
		(0.001)***	(0.001)***		(0.001)**	(0.002)
sex		0.181	0.177		0.157	0.153
		(0.022)***	(0.025)***		(0.021)***	(0.023)***
education		-0.046	-0.050		-0.045	-0.048
		(0.006)***	(0.010)***		(0.006)***	(0.009)***
union membership		0.261	0.191		0.244	0.220
		(0.025)***	(0.036)***		(0.028)***	(0.041)***
market Gini			-0.019			-0.023
			(0.012)			(0.012)*
perceived Gini			0.083			0.077
			(0.024)***			(0.020)***
economic development			0.205			0.193
			(0.114)*			(0.111)*
economic growth			-0.033			-0.037
			(0.013)***			(0.013)***
ethnic fractionalisation			-0.010			-0.011
			(0.005)**			(0.005)**
country×year fixed effects	Yes	Yes	No	Yes	Yes	No
pseudo R-squared	0.080	0.089	0.062	0.073	0.080	0.054
observations	70,134	56,557	55,065	63,127	51,151	49,797
clusters	71	67	65	71	67	65

Notes: Entries are ordered logistic regression coefficients with robust standard errors clustered by country×year in parentheses; the cut-points are not reported. * significant at 10%; ** significant at 5%; *** significant at 1%.

Appendix 9. The effects of inequality perceptions on preferences (multilevel)

	redistributive preferences (binary)					
	(1)	(2)	(3)	(4)	(5)	(6)
perceived actual inequality	0.518	0.525	0.518			
	(0.065)***	(0.062)***	(0.062)***			
personal norms of inequality	-0.889	-0.903	-0.894			
	(0.071)***	(0.070)***	(0.070)***			
perceived injustice				0.445	0.459	0.454
				(0.041)***	(0.036)***	(0.036)***
perceived social position	-0.215	-0.199	-0.196	-0.214	-0.200	-0.197
	(0.010)***	(0.011)***	(0.011)***	(0.010)***	(0.010)***	(0.010)***
age		0.005	0.005		0.002	0.002
		(0.001)***	(0.001)***		(0.001)**	(0.001)**
sex		0.230	0.230		0.216	0.216
		(0.027)***	(0.028)***		(0.026)***	(0.026)***
education		-0.051	-0.051		-0.049	-0.050
		(0.007)***	(0.007)***		(0.007)***	(0.007)***
union membership		0.282	0.283		0.279	0.280
		(0.031)***	(0.031)***		(0.035)***	(0.035)***
market Gini			-0.019			-0.023
			(0.014)			(0.014)
perceived Gini			0.100			0.083
			(0.025)***			(0.025)***
economic development			0.087			0.043
			(0.160)			(0.163)
economic growth			-0.029			-0.033
			(0.017)*			(0.018)*
ethnic fractionalisation			-0.007			-0.008
			(0.005)			(0.005)
σ_u^2 (country×year)	0.466	0.502	0.343	0.459	0.482	0.345
	(0.082)	(0.086)	(0.056)	(0.082)	(0.087)	(0.062)
observations	70,134	56,557	55,065	63,127	51,151	49,797
clusters	71	67	65	71	67	65

Notes: Entries are multilevel logistic regression coefficients with robust standard errors clustered by country×year in parentheses; the constant terms are not reported. * significant at 10%; ** significant at 5%; *** significant at 1%.

Appendix 10. Additional analysis using instrumental variables

	redistributive preferences (binary)					redistributive preferences (cont.)	
	(1) ivprobit	(2) ivprobit	(3) ivprobit	(4) *cmp*	(5) *cmp*	(6) 2SLS	(7) 2SLS
perceived actual inequality	0.077			0.558		0.485	
	(0.128)			(0.168)***		(0.052)***	
				[47247.12]		[500.60]	
personal norms of inequality		-0.509		-0.859		-0.713	
		(0.102)***		(0.141)***		(0.058)***	
				[24999.88]		[298.34]	
perceived injustice			0.673		0.653		0.565
			(0.125)***		(0.116)***		(0.046)***
					[8730.58]		[113.40]
perceived social position	-0.134	-0.116	-0.091	-0.114	-0.111	-0.095	-0.089
	(0.007)***	(0.008)***	(0.010)***	(0.006)***	(0.006)***	(0.004)***	(0.004)***
individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
country×year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wald p-val	0.694	0.050	0.003				
pseudo R-squared				0.145	0.129		
R-squared						0.210	0.165
observations	58,922	60,029	51,151	56,557	51,151	56,557	51,151
clusters	67	67	67	67	67	67	67

Notes: Columns (1), (2), and (3) report the probit model with continuous endogenous covariates (*ivprobit* in Stata) and robust standard errors clustered by country×year in parentheses. Columns (4) and (5) report *cmp* estimations with the probit model and robust standard errors clustered by country in parentheses. Columns (6) and (7) report 2SLS estimations with standard errors in parentheses. All the first stages and constant terms are not reported. The F-statistic associated with the first-stage effect of the instrument on the endogenous variable is reported in brackets. Individual controls include age, sex, education, and union membership. Wald p-val reports the p-value of the Wald test of exogeneity of the instrumented variables; the null hypothesis is that there is no endogeneity. In the *cmp* estimations, pseudo R-squared and observations are the results of the first-stage. * significant at 10%; ** significant at 5%; *** significant at 1%.

CONCLUSION

This thesis breaks fresh ground in the empirical research of the linkage between democracy, inequality, and redistribution by providing a new approach towards conceptualising and measuring democracy and shedding new light on the role of inequality perceptions in determining redistributive preferences. The association between democracy, inequality, and redistribution is one of the most significant topics in the field of political economy, but its empirical study is underdeveloped, particularly for developed democracies. This is not only because there are difficulties in the conceptualisation and measurement of democracy but because a simple premise is prevalent—that policy preferences determined by pure economic self-interest lead to policy outcomes, which keeps empirical research from exploring beyond the bounds of a rational choice perspective. The main three chapters of the thesis were designed to overcome these limitations and to offer the empirical foundations for further exploration of the democracy-inequality-redistribution triad.

Summary and discussion of the findings

Chapter 1 addressed the conceptualisation and measurement issues of democratic quality by employing a middle-range conception of democracy that avoids both the minimalist and maximalist approaches. In doing so, the DPI as a new measure of democratic performance was constructed. This index contains the eight core dimensions of democracy: individual liberties, rule of law, public sphere, transparency, participation, representation, competition, and mutual constraints. However, these

dimensions were not aggregated into a summary measure of democracy in order to avoid masking effects amongst the dimensions. There is also a lack of a strong theory of how to combine them. The DPI can be used to capture a shade of difference amongst advanced democracies across distinct dimensions, thereby contributing to empirical research on the dynamics of democracy.

The empirical evidence from Chapter 2 casts doubt on the standard model of redistribution that assumes a significant and positive impact of market inequality on public support for redistribution as well as redistribution. Furthermore, the assumption that preferences for redistribution directly translate into redistribution was not empirically supported. However, it is evident that perceived inequality, which has been largely overlooked in the comparative study of inequality and redistribution, has a significant impact on preferences for redistribution in OECD countries.

In Chapter 3, the focus was on the role of individuals' subjective social position and inequality perceptions in determining redistributive preference. The new measures of perceived actual inequality, personal norms of inequality, and perceived injustice were invented for the empirical analysis. The evidence shows that the effect of subjective social position on support for redistribution is stronger than that of objective social position, and that individuals' inequality norms play a more crucial role in preference formation than does their perception of actual inequality.

Each chapter is independent but linked to one another in some ways. First, the main variables of the first and second chapters can be used in cross-national analyses investigating the linkage between democracy, inequality, and redistribution. The relationships between the eight dimensions of democratic performance and other relevant variables might be further examined if theoretical arguments are solid enough to be empirically tested, although a summary measure of democracy has not been

provided. Second, the second and third chapters are closely interrelated since they confirm the strong linkage between perceptions of social position and inequality, not actual income position and inequality, and redistributive preferences at both the country and individual levels, thus challenging the conventional model of redistribution and its basic assumption.

The main chapters of the thesis together contribute to the advancement of macro- and micro-comparative studies in the field of political economy not only by providing more developed empirical measures of democracy and perceived inequality than previous ones but also by casting new light on the role of perceived inequality in redistributive politics. However, there remain limitations or issues that need to be addressed. Here are a few examples. First, the conceptualisation of democracy and inequality perceptions will still matter because there might be no conclusive way of conceptualising these concepts. It is hoped that these essays will serve as a catalyst for a wider discussion about that. Additionally, if the eight dimensions (individual liberties, rule of law, public sphere, transparency, participation, representation, competition, and mutual constraints) or the three principles of democracy (freedom, equality, and control) from Chapter 1 should be aggregated into a summary measure of democratic principles or democracy, it is important to note that there must be valid theoretical justifications for how to combine the dimensions or principles.

Second, there should be more discussion on the measurement of both actual and perceived economic inequalities. Even though the issue of income underreporting has been considered, all studies indicate that income is far less concentrated than wealth (Davies and Shorrocks 2000, 664). However, there is currently a dearth of comparable cross-national data on wealth. Moreover, in Chapter 2, the perceived Gini calculated from the distribution of individuals' subjective social position does not purely capture

the perception of economic inequality. Social stratification does not simply reflect an economic dimension, but class structure and social status are involved in its formation (Goldthorpe 2010). In addition, in Chapter 3, perceived actual inequality and personal norms of inequality are measures of wage inequality. Wage is just a part of income, and thus there is a gap between wage inequality and income inequality, not to mention wealth inequality.

Third, the Gini coefficient using the distribution of perceived social location, presented in Chapter 2, has the same limitations as the Gini coefficient for the distribution of actual income. For instance, the Gini coefficient for income inequality is a middle-sensitive index, which is considered as its main shortcoming (Mulé 1998, 4). There is thus an alternative indicator of inequality that is a top- and bottom-sensitive measure; it is the Palma ratio, which compares the share of the top 10% to the share of the bottom 40% (Palma 2006; 2011). Cobham and Sumner (2013) argued that the Palma is more intuitively interpretable and policy-relevant than the Gini, although they also demonstrated that there is a close fit between the Palma and the Gini. However, for the sake of efficiency, we did not attempt to calculate the Palma using the distribution of perceived social position and compare it to the Gini for the analysis in this chapter.

Last, there is an issue of endogeneity between dependent and independent variables in Chapters 2 and 3. Specifically, perceived inequality and individuals' perceptions of inequality are likely to be simultaneously endogenous to redistributive preferences, and these preferences might also have an endogenous relation with redistribution, albeit not simultaneously.[82] To deal with the causality between the variables that might run in

[82] This endogenous relationship is similar to the link between public opinion and public policy in the thermostatic model of Soroka and Wlezien (2010).

both ways, a range of instrumental variables estimations were used in the second and third chapters. However, there should be more discussions on the appropriateness of the instrumental variables and estimation techniques employed in the thesis. In the case of 2SLS and *cmp* estimations, for instance, we accepted Staiger and Stock's (1997) suggestion of using the first-stage F-statistic to test whether or not the given instruments are weak; meanwhile, Stock and Yogo (2005) further explored the Staiger-Stock rule of thumb and claimed that this rule of thumb does not provide sufficient assurance of the absence of a weak instruments problem when the number of instruments is not very small.

Policy implications

The main findings and new empirical measures from this thesis have important policy implications for making advanced democracies more democratic, more equal, and more redistributive. First, the DPI as a measure of democratic performance, constructed in Chapter 1, has the potential to be used as a policy evaluation tool, albeit an indirect one, to address many challenges that contemporary democracy faces and to provide a guide to promoting more democraticness in various dimensions. Specifically, this measure enables us to assess the levels of performance in each dimension of democracy in a country and to compare them to those of other countries. Evaluating more precisely where a democracy is placed in a template of democratic performance can help facilitate mutual learning from democracies, thus advancing democracies further, as Campbell (2008, 8) stressed. This new analytic tool not only contributes to bridging the divide between theoretical and empirical research in the study of democracy, but it also offers citizens an opportunity to rethink modern democracy.

Second, the disconnect between policy preferences and policy outcomes, which is one of the important findings from Chapter 2, paradoxically requires us to connect them in one way or another because this finding implies that policy outcomes are not responsive to the public. No one denies that making democracy more responsive is important, as responsiveness mostly means 'doing what the citizens want' (Powell 2005, 74). Dahl (1971, 1) also famously argued that 'a key characteristic of a democracy' is 'the continuing responsiveness of the government to the preferences of its citizens, considered as political equals'. The translation of policy preferences into policy outcomes, however, is not straightforward because of the complex political processes placed between them. Nevertheless, we need to try to reduce wide discrepancies between citizens' demand and policy makers' supply by realigning and innovating both institutional and non-institutional arrangements.

Third, the finding of Chapter 3 that individual preferences for redistribution reflect subjective social position more strongly than objective social position leads us to take a closer look at how people perceive their social position. There exists a well-known explanation in social psychology that people tend to situate themselves in the middle of the social hierarchy. The magnitude of this psychological effect, however, varies across countries, and the prevailing explanation of this variability focusses on cultural dimensions. By contrast, Loughnan et al. (2011) provided evidence that socioeconomic differences, such as income inequality, are more firmly related to biased self-perception than cross-cultural differences. That is, their finding indicates that there exists less biased self-perception in a more equal society. This, in turn, leads us to take notice of the active role of policy changes that can remedy unequal socioeconomic structures for citizens to perceive their social position more accurately.

Last, the fact that citizens' inequality norms more strongly influence preferences

for redistribution than do their perceptions of actual inequality, as evidenced in Chapter 3, reminds us of the importance of social interventions targeting norm perceptions. A better understanding of the inequality norms that people hold through further exploration will enable us to find out a more effective way of changing these norms in order to boost redistributive preferences. Although it is not guaranteed that an increase in preferences for redistribution leads to more redistribution, as shown in Chapter 2, conventional wisdom says that, where there is a demand, there will be a supply. Thus, if we pursue more redistributive policies, it is important to mobilise support for redistribution as well as to promote democratic responsiveness.

Recommendations for future research

This thesis opens up new avenues for empirical research as well as theoretical discussions on the link between democracy, inequality, and redistribution. The following topics are recommended for future work. First, the associations amongst both the democratic principles and dimensions in the first chapter need to be explored in depth. A more coherent and systematic way of conceptualising democracy and its components (principles and dimensions) is also necessary. In doing so, we may elucidate the linkages or trade-offs amongst the dimensions as well as principles of democracy, which would serve as a basis for a higher level of aggregation if a strong theory for a summary measure exists, as discussed.

Second, the finding of the second chapter that preferences for redistribution do not translate into any type of redistribution requires an alternative theoretical explanation of the relationship. It might be one of the cases in which policy outcomes do not reflect public opinion (Page and Shapiro 1983, 189). There are also two strands of

explanations for limited redistribution in a democracy: First, the political process is biased towards the rich; second, the poor tolerate some inequality and reject radical redistribution (Harms and Zink 2003). Furthermore, unequal responsiveness to policy preferences of the wealthy has recently become an emerging subject of scrutiny (Page, Bartels, and Seawright 2013, 66); from this perspective, the principal assumption in previous studies on redistributive politics is no longer tenable—namely, that individuals' policy preferences have equal political influence, regardless of their socioeconomic status, in shaping policy outcomes.[83]

Third, it would be fruitful to explore the causes and consequences of inequality perceptions, both of which are separate but interconnected topics. For this thesis, only the effects of inequality perceptions on redistributive preferences were examined, but we can expand the horizon of empirical research by turning our eyes not only towards other dependent variables but also towards factors driving perceived inequality.[84] Doing so is expected to result in a more substantial model of perceived inequality by clarifying the causal directions of relevant variables.

Last, the linkage between democracy, inequality, and redistribution could be extensively examined through the new measures of democratic quality and perceptions of inequality constructed in this thesis. However, it would be productive to explore a specific relationship between them if there is a strong theoretical argument about the

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[83] In relation to this, Hungerford (2015) presented the elites model of redistribution, against the median voter model, in which a greater concentration of income at the top leads to a lower redistribution. Furthermore, Hacker and Pierson (2014) pointed out that policy-making is more complicated than suggested by the median voter model of redistribution, and they proposed a paradigm shift from a Downsian perspective towards a Schattschneiderian perspective in the study of political economy.

[84] Gimpelson and Treisman (2015, 26–7) offered several plausible hypotheses about what causes perceptions of inequality: the role of reference groups, media influence, ideological legacy, and other psychological effects (a desire to blend in and self-enhancement bias), for instance.

relationship. Furthermore, it is still an open question whether or not it is viable to construct an aggregate measure of democracy that can be used as a structural factor in an analysis. Even if it is feasible to do so, in some cases, it might be appropriate to consider more disaggregated measures of democracy to capture the dynamic and detailed features of the relations between democracy and other variables.

The main objective of this thesis is to provide the foundations of empirical research on the dynamics of democracy, inequality, and redistribution in advanced democracies. The three essays critically review a wide range of existing measures of democracy and inequality, including perceptions of inequality, and suggest new approaches to produce more valid measures for empirical studies. With the new measures of democracy and perceived inequality, the thesis also provides relevant theoretical discussions that cast doubt on the conventional theories or assumptions embedded in the democracy-inequality-redistribution triad. It is hoped that this thesis will enhance our understanding of the dynamic relation between democracy, inequality, and redistribution. In view of the negative implications of thinning democracy, increasing inequality, but limited redistribution even in established democracies, of which many people have been aware in recent decades, research on the relationship between the triad is, and will be, crucial and urgent to remedy the issues that we still face.

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